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VOL. XIV. NO. 15.

AUGUST 1, 1886.

PEACE • ON • EARTH •
GOOD • WILL • TOWARD • MEN



GLEANINGS IN BEE CULTURE

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TO
BEEKEEPING

& HOME INTERESTS.
MEDINA, OHIO
BY
ALBION

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You can not look over the back No's of GLEANINGS or any other Periodical with satisfaction, unless they are in some kind of a Binder. Who has not said—"Dear me, what a bother—I must have last month's Journal and it is nowhere to be found"? Put each No. in the Emerson Binder as soon as it comes, and you can sit down happy, any time you wish to find anything you may have previously seen, even though it were months ago.

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High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS.

57fd Sole Manufacturers,
SPROUT BROOK, MONT. CO., N. Y.

FOR BEES, see my adv't in July 1st No., p. 526.
15d H. M. MOYER, HILL CHURCH, BEES CO., PA.

Cash for Beeswax!

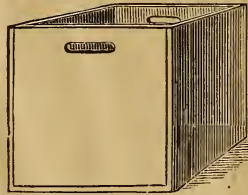
Will pay 20c per lb. cash, or 25c in trade for any quantity of good, fair, average beeswax, delivered at our R. R. station. The same will be sold to those who wish to purchase, at 25c per lb., or 30c for best selected wax.

Unless you put your name on the box, and notify us by mail of amount sent, I can not hold myself responsible for mistakes. It will not pay as a general thing to send wax by *express*.

A. I. ROOT, Medina, Ohio.

POTATO-BOXES

(TERRY'S).



These are made of basswood, bound with galvanized iron. The galvanized iron gives strength, and the basswood strength and lightness. These hold exactly a bushel when level full, and may be piled one on top of another. Although they are made especially for potatoes, they can be used for fruit, vegetables, picking up stones on the farm, and a thousand other purposes. When piled one above the other, they protect the contents from the sun and rain; and from their shape a great many more bushels can be set into a wagon than where baskets are used. They are also much more substantial than baskets.

Price 25 c each; 10, \$2.25; 100, \$20.00. In the flat, including nails and galvanized iron, \$1.75 for 10; 100, \$16.50; 1000, \$150.

A. I. ROOT, MEDINA, OHIO.

RUBBER STAMPS

DATING, ADDRESSING, BUSINESS, LETTER HEADS, ETC.



No. 1.



No. 3.



No. 2.

self and all who do business with you a "world of trouble." I know, you see.

We have those suitable for druggists, grocery-men, hardware dealers, dentists, etc. Send for circular.

A. I. Root, Medina, O.

Address only, like No. 1, \$1.50; with business card, like No. 2, \$2.00; with movable months and figures for dating, like No. 3, \$3.00. Full outfit included—pads, ink, box, etc. Sent by mail postpaid. Without ink and pads, 50 cts. less.

Put your stamp on every card, letter, paper, book, or anything else that you may send out by mail or express and you will save your-

[If you want fine honey-gatherers, try J. P. Moore's red-clover Italians. See "ad." 15fd

Contents of this Number.

Bees and Neighbors.....	618
Bees in Open Air.....	608
Bees, To Work in Sections.....	614
Bees and Bee-keeping.....	631
Blacks vs. Italians.....	626
Book-reviews.....	609
Boxes for Nuclei.....	622
California.....	626
California Bee-story.....	608
Candy, Todd's Honey.....	629
Carniolans.....	611, 612
Carniolans as Workers.....	613, 615
Comb or Extracted Honey.....	623
Cuba.....	621
Doolittle's Success.....	631
Doolittle on Nuclei.....	622
Drones from Mismatched Q's.....	614
Editorials.....	631
Foul Brood.....	616, 623
Heads of Grain.....	626
Heddon's Honey-board.....	613
Heddon's Article.....	605
Holes in Combs for Winter.....	607
Home Influence, by Terry.....	625
Honey Column.....	603
Honey, Bitter.....	626
Honey, Candied.....	617
Honey-boards.....	611, 612
Honey-dew.....	624, 626, 627
Honey-crop of England.....	631
Honey-wagon, Starting.....	627
Jane Meek & Brother.....	616
Leg of Worker.....	609
Live-oak Ball.....	629
McGee's Bees.....	619
Melilot.....	606
Our Own Apiary.....	630
Plant Nectar.....	620
Queens Changing Color.....	626
Queens, 10 in a Colony.....	611
Reduction for Fairs.....	631
Reports Encouraging.....	630
Reports Discouraging.....	628
Sulphuric Acid.....	623
Seed by Careful Selection.....	607
Shade and Ventilation.....	627
Students in Apiculture.....	624
Swarms, Second.....	611
Sweet Clover.....	626
Wax, Production of.....	622

CONVENTION NOTICES.

The next meeting of the Stark Co. Bee-Keepers' Society will be held in Grange Hall, Canton, O., Aug 31, 1886.

MARK THOMSON, Sec.

The Committee is hard at work perfecting plans for the next Annual Convention of the N. A. B. K. A., to be held at Indianapolis, Oct. 13, 14, and 15, 1886, and will soon be ready for the general announcement of programme, etc.

DOUGHERTY & WILEY, Indianapolis, Ind.

KIND WORDS FROM OUR CUSTOMERS.

HOW WELL OUR EXTRACTOR PLEASES.

We received the extractor last Saturday, the 19th. It works splendidly. We have already extracted enough honey to pay for it, if we can get a fair price for it. Mr. Root, you can not know how thankful we are to you for sending it without having received the money; for if we had been obliged to wait until we had the money to send, the honey season would have been almost past; and all such favors in the past and future have been and will continue to be highly appreciated. MILLER BROS.
Bluffton, Mo., June 26, 1886.

CARNIOLAN * QUEENS.

Carniolans are the Gentlest Bees Known,

AND EQUAL TO ANY OTHER RACE FOR WORK.

THE QUEENS ARE THE MOST PROLIFIC.

I offer daughters, of Imported Benton Carniolan queen, raised in my apiary of 40 colonies of pure Carniolan bees, during the remainder of this season, \$1.00 each; six, \$5.00.

DR. S. W. MORRISON,
Oxford, Chester Co., Pa.

13tdfb

ITALIAN QUEENS FOR 1886

Tested, 90 cts.; untested, 50 cts.; warranted, 65 cents.

C. C. KIRKMAN,
Coxville, Pitt Co., N. C.

RED-CLOVER ITALIANS.

During the season just passed, Moore's Italians have roared away on red clover, in countless thousands. Reduced prices: Warranted queens, each, 80 cts.; per 1/2 doz., \$4.50. Tested queens, \$1.50. Safe arrival and satisfaction guaranteed. Circular free. 15tdfb J. P. MOORE, MORGAN, PENDLETON CO., KY.

Jerseyville, Ill., July 23, 1886.

Mr. J. T. Wilson, Dear Sir:—The 55 warranted queens I received of you last year were all purely mated except one. The most of the queens were choice, and as good as higher-priced ones, for general purposes.

E. ARMSTRONG.

One queen, 75 cts.; 6 for \$4.00. Warranted purely mated. Will work as well on red clover as anybody's bees. Will exchange for honey, alsike clover seed, or Poland-China hogs.

15d J. T. WILSON, Nicholasville, Ky,

EXCHANGE DEPARTMENT.

Notices will be inserted under this head at one-half our usual rates. All ads intended for this department must not exceed 5 lines, and you must say you want your ad in this department, or we will not be responsible for any error. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates.

WANTED.—To exchange 20,000 strawberry-plants, Crescent Seedling, Cumberland Triumph, Sharpless, and Glendale, 75 cts. per 100; \$4.00 per 100, for bees, foundation, or improved poultry.
10tdfb W. J. HESSER, Plattsmouth, Neb.

WANTED.—To sell, after June 1st, 50 3-frame L. size nucleus colonies of hybrid bees, with queens, for \$3.50 each, delivered at Plattsmouth, Neb., or I will exchange for young stock, cattle or horses, or apiarian supplies.
12tdfb J. M. YOUNG, Rock Bluff, Cass Co., Neb.

WANTED.—A partner to take half-interest in an Apiary, with a little capital. Address
LOUIS WERNER, Edwardsville, Ill.

FOR SALE.—Pasteboard boxes for inclosing section honey. The best out! Improved over last year. Thousands sold! Price, 1-lb. size, \$6.00; 2-lb., \$8.00 per 1000. One sample, 5c. 14-oz. square glass jars, \$5.00 per gross; 1 1/2 gross in case. Fine assortment of honey labels. Catalogue free.
14-17db A. O. CRAWFORD, S. Weymouth, Mass.

WANTED.—To exchange bees or queens for foot-power saw. Will sell fine tested queens for \$1 each; untested, 70 cts. each, either Syrian or Italians.
ISRAEL GOOD, Sparta, Tenn.

WANTED.—To exchange Italian queens for alsike clover seed. J. T. VAN PETTEN, Linn, Kan.

FOR SALE.—A two-story brick house, with five lots, good barn, ice-house with cooling-room, bee-house, honey-house, wood-house, etc. Grapes, berries, apples, and cherries on the place; in small town, location suitable for bee or chicken business. Will sell cheap for cash, or exchange.
15-18db ANABEL RONALD, Grand View, Iowa.

WANTED.—To exchange a warranted first-grade fruit and vegetable evaporator and baker, for honey—a bargain for an orchard owner.
15d JNO. C. CAPEHART, St. Albans, W. Va.

WANTED.—To exchange best drone-traps made for one or more extractors, Simplicity frame. Send for circular.
15tdfb J. A. BATCHELDER, Keene, N. H.

WANTED.—To exchange for comb or extracted honey, cash or offers, 15,000 pot-grown strawberry plants of the best varieties; also game cocks. Can give best reference. GEO. M. WERTZ,
15tdfb Johnstown, Cambria Co., Pa.

WANTED.—To exchange hybrid bees, in 10-frame Simplicity one-story hive, with 10 frames full of brood and honey, for incubator, printing-press, Pekin ducks, or B. L. pullets, or any thing useful. Write at once, saying what you have for exchange.
15-16 Address JNO. W. MARTIN, Greenwood, Va.

WANTED.—To sell or lease a farm, 160 acres in cultivation, good buildings, good water, an apiary of 75 colonies in Simp. hives, carp-ponds, etc.
15-16d A. W. MATTHEWS, Galla Rock, Pope Co., Ark.

FOR SALE, or will exchange for 20 two-story Simplicity hives, complete, in flat, golden Italian queens. Price, mismatched, 50 cts.; untested, 75 cts. Tested, \$1.50; best select tested, one year old, \$2.50. Safe arrival and satisfaction guaranteed. Reference, Bank of Princeton, and L. Goodwyn, P. M., Frenchville, W. Va.
L. L. HEARN,
Frenchville, W. Va.

WANTED.—To exchange full colonies Italian bees for first-class bicycle, 50 inch, or first-class double-barrel breech-loading shot-gun, 10 or 12 bore.
15 D. S. BASSETT, Farnumsville, Wor. Co., Mass.

WANTED.—To exchange strawberry-plants, Crescent, Big Bob, and Clark's Seedling, for alsike clover seed or money. MAHALA B. CHADDOCK,
15d Vermont, Fulton Co., Illinois,



Vol. XIV.

AUGUST 1, 1886.

No. 15.

TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00; 10 or more, 75 cts. each. Single Number, 5 cts. Additions to clubs may be made at club rates. Above are all to be sent to ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS than 90 cts. each. Sent postpaid, in the U. S. and Canada. To all other countries of the Universal Postal Union, 18c per year extra. To all countries NOT of the U. P. U., 42c per year extra.

YOUR "OWN APIARY."

SOME SUGGESTIONS FROM FRIEND HEDDON.

AS Ernest is now the practical apiarist at the "Home of the Honey-bees," perhaps I can shed most light by discussing with him the more vital and practical points connected with our pursuits. Now a word about

REVERSING.

In enumerating some of its advantages, on page 593, Ernest has omitted one which we prize most highly. It is this: When a frame is completely filled with comb, leaving no lurking-places, we can quickly clear it of all bees for extracting or other purposes, and more readily find the queen when traversing such combs. He says, truly, that the metal corners could be attached to the Heddon reversible frame; but, how differently we look at these things! I could not be induced to use metal corners under any circumstances. I find them liable to bend, and are cutting to the fingers when handling and shaking the combs. The common wooden projection is very readily movable when placed upon metal rabbets, and we use such in all our extracting supers, but have entirely discarded these rabbets in the brood-chamber; for as we handle hives more and frames less, we do not want the frames to slide about so easily. We so used 25 hives for three years.

Is it not true, that our older producers are likewise discarding metal corners for frames? Metal standards are not needed in our frames, because the top-bar is double; and there is nothing to even tend to sag the outer bar, which determines the accuracy of the bee-space. If the inner bar sags, it straightens again after inversion.

The large open space which our style of frame leaves between the hive and the lower half of the frame-end, aids much in removing and readjusting it. The outer top-bar must be firmly nailed to the outer end-bars to prevent pulling off when shaking heavy combs, as it is not fastened to the comb. I suggest two proper-size barbed wire nails at each end; and we use and prefer whitewood or poplar for these end-pieces.

ROBBING.

Let us try having that pane of glass a looking-glass, and see what effect that will have. Perhaps not as good as plain glass, but we might try it.

EMPTY BROOD-NESTS.

Friend Hutchinson, it appears, is carrying this problem all alone. Almost every day I receive letters declaring against his position, citing experiments as well as theory. The basic principle of friend H.'s departure, I advocated some years ago as between empty frames or frames of foundation and full complete combs, when running for comb honey. I did not at the time, and can not say that I do now, conceive that this principle reaches so far, that empty frames are even more profitable than frames filled with foundation, at the same price, when running for comb honey. But I have not experimented directly upon this point, and friend H. has, and he is an apiarist in whose integrity and practical knowledge, as well as keen insight, I have the greatest faith; in fact, my acquaintance with him compels me to say that I hold him second to no man in America; and this, coupled with his vigorous pen, accounts for his shooting up above the apicultural horizon like a meteor. While such great "doctors" disagree, and while I am confident that both sides are right, in part, next season I am

going to test this important problem for myself and my surroundings, in hopes to become an ally or an experienced opposer of friend Hutchinson's. It is a great problem, directly affecting the economy of our pursuit.

OUR 1886 MARKET.

Hold on, friend Root! "sehtop a leedle;" somewhere in last issue you spoke of the low price we were going to get for our 1886 crop of honey. Notwithstanding my wide correspondence with bee-keepers, and careful watching of this point in the journals, I am unable to see any cause for said "low prices," unless it be statements like your own referred to. In very many localities in the U. S., this year's crop is almost or quite a total failure. In many others the white-clover crop is good; but so far as I can learn, the basswood, the greatest yielder of them all, is not even a fair crop, except in rare instances; and, taking the whole country together, may be pronounced almost a failure. Now, why should we look for prices lower than those of last year? Let no man so consider it until evidence compels him to. Let me tell you why. Honey is essentially a luxury; a large portion of honey-consumers would buy nearly or quite as much at a high price as they could be induced to consume at any price. Last year's prices were as low as bee-keepers can thrive at, and I firmly believe that if all who have honey to sell will take courage and advantage of the pitiful fact that many of our brothers have none at all, there will be no trouble to find a demand for the 1886 crop at prices equal or better than those realized last year.

FORMING NUCLEI.

Ernest's last report of his experience with the Doolittle method is just what what we should expect here. Had he met the same success reported by Mr. Doolittle, we can not then see any reason for adopting that method. We have this season formed some 300 nuclei, and in our next will tell you how we succeed, to our entire satisfaction with (we think) less than one-fourth the labor and trouble necessary to the carrying-out of the Doolittle plan.

Dowagiac, Mich., July, 1886. JAMES HEDDON.

I am very glad if honey will not have to go at a low price, friend H.; but I judged so because so many are wanting to sell us honey while we are so well supplied that we can not make even a decent offer for it. Now, the best remedy I can think of in the line of your suggestions is to keep our Honey Column full. Will our brethren who have honey to sell tell how much, what quality, and what price they want, so that we may put it in the Honey Column? I think those who advertise in that way usually make sales sooner or later. We presume you all know that such notices are printed free of charge. —In regard to metal corners, I think that those who raise queens as we do will generally prefer them. With the constant manipulation in our apiary, we could not think of having combs that must be pried loose before they can be handled; and as our combs seldom get very heavy with honey, they give little or no trouble in the way of cutting fingers.

I tried the looking-glass, but not with so good results. The plain sheet of glass, by reason of its transparency, does not alter the appearance of the entrance; and the robbers, being deceived, will worry and weaken

themselves in much the same way that they do in trying to get through our windows. On further trials, however, although the glass in many cases will answer a very excellent purpose, I think I should prefer to contract the entrance as is ordinarily practiced to prevent robbing. I have found that the glass will worry the occupants of the hive as well as the robbers, and also, as it is a little inconvenient to carry the glass about, the boys do not use it. It did not occur to me that the bees could be shaken off more easily, and the queen be much easier found, when the frames have been reversed. I see no reason why it should not be so.

MELILOT, OR SWEET CLOVER, AS A HONEY-PRODUCER.

FRIEND MUTH GIVES US SOME DEFINITE FACTS IN REGARD TO THE QUALITY OF THE HONEY.

FRIEND ROOT:—For the first time since I kept bees, our honey harvest has kept up, apparently, through the month of July. We never had so abundant a supply of melilot, or sweet-scented clover, as we have this year. Every hilltop and vacant lot in and about our city seems to be covered with it, and it is swarming with bees. They do their work quietly and steadily. Passing along a road a few days ago, which was lined with melilot, I stopped my wagon and went in. It was alive with bees, steadily at work. I was surprised, as I did not notice any bees while driving along. So far, melilot has furnished only enough honey to keep bees breeding until late in the fall, while now we get a surplus, which may last until frost comes.

The month of June, in this part of the country, is or has been our honey month, as with it white clover begins and ends, which used to be our whole resource. Cold nights during the first half of last June prevented the secretion of nectar; and wet weather during the latter half damaged our crop. I don't think that 25 lbs. of white-clover honey per colony is produced in the States of Ohio, Kentucky, or Indiana.

To-day's mail brings you a sample of melilot honey, which is produced on one of our hilltops on the west side of our city—Price's Hill. It is a fair sample of my own honey, and of that of a friend who lives at Clifton Heights, which is a hilltop on the north of our city. These three samples being alike, I have reason to believe that the sample mailed you is true melilot honey. The honey is very sweet, flavor fair, though not as good as that of white clover. It has a good body, but a color as if it were mixed with soot. Such honey will never answer to be put in the market for table use. The color of the honey is much stronger shown in a larger bottle than the one mailed you. This small bottle, however, will answer the purpose, if you hold a small bottle of white-clover honey alongside of it. If I am correct as to the source of this honey, melilot will be a great disappointment to us. I hope friends from other parts will report on the subject.

Cincinnati, O., July 17, 1886. CHAS. F. MUTH.

Many thanks, my good friend, for your kind letter, and the sample of honey. I should not be in haste to feel disappointed, for it occurs to me that the sooty appearance of the honey may be caused by the smoke of your great city, even if the clover does grow

on the hilltops. You will remember that friend Kendel said, some time ago, that he would have to give up raising comb honey, by reason of the soot; and later I think he has said he will have to abandon liquid honey for the same reason. The flavor of the honey, I should call beautiful—in fact, I believe I should prefer it to honey made from common white clover—that is, at first taste. Now, can't some of the friends who have been raising melilot by the acre tell us if it always has a dark, sooty color? If melilot can be made available for some other purpose than the honey it produces, it seems to me it would be quite promising as a honey-plant.

A KIND REPORT FROM ONE OF OUR FRIENDS OF THE MINISTRY.

GETTING HOLES IN THE COMBS FOR WINTER, ETC.

MY DEAR BROTHER A. I. ROOT:—I thought I might venture a line in GLEANINGS, and thus in a small way reciprocate the kindness of others who from time to time have given to such as me encouragement and instruction. However, I shall not assume the role of instructor.

I began last season with one colony of Italians; increased to 3, but took no honey. They wintered nicely, in the main. The ones in the single-wall Simplicity—upper story filled with chaff, and protected on the west and north by a wall of empty hives—came through stronger, however, than the ones in the chaff hive. At the suggestion of Bro. James Walcher—an apiarist of not a little celebrity, located near Millersville, this State—in the Simplicity single-wall I cut holes through the combs near the top-bar, about one inch in diameter, that the bees might have easy access to all the combs, without passing around at the bottom, and thus expose themselves to the cold. I do not see but it answers the same purpose of Hill's device; and if so, dispenses with this much that would demand care and space. I did not accommodate the bees in the chaff hive with this "short cut," though in other respects they were the same; so I am persuaded that the holes were a decided advantage, and especially for a winter such as last.

This spring I procured 3 colonies more—Italians. Two of them were quite weak, so to start with I had 3 strong and 3 weak colonies. I have increased to 13 colonies, and have taken, with the aid of the Novice extractor, 953 lbs., and 96 lbs. in 1-lb. sections, making in all 1049 lbs.

We had an ideal spring, and the summer thus far has been uncommonly fine. We have had flowers in profusion, and the flow of nectar has been most copious. The white clover and linden have both yielded profusely, and now the mustard and smartweed are making yellow and pink every nook and corner, and all these flowerets seem to be doing their best, so the busy bees are still invited to sip, and will continue to provide, for weeks to come, I doubt not, these delicious juices.

While it is my chief concern to herald the glad tidings of God's full and precious Christ to poor lost ones, I can fill up the spare hours most happily in looking after the bees, and I am made to sing from a full heart at each new unfolding, "How good is the God we adore!"

I have found the A B C book and Cook's Manual valuable aids; they have helped me through many a perplexity. I may add, I began with gloves and veil, but I have dispensed with both.

The 10-cent honey-knife is just the thing. It has done all our uncapping.

FRANK C. BLOUNT,
Lawndale, Ill., July 14, 1886.

Thanks, friend B., for your kind letter. Some years ago it was quite common to cut these winter-passages; but the bees often seal them up during a good honey-flow, and some of the friends think it makes the combs look unsightly. Another objection is, sometimes the cluster is over at one side of these holes, and they don't answer the purpose. To obviate this latter, two holes have been suggested, 3 or 4 inches apart; but as the Hill device, or some equivalent, permits the bees to pass out and around, and does not mutilate the combs, we have rather preferred it.

IMPROVING OUR SEED BY CAREFUL SELECTION OF STOCK.

SOME KIND WORDS FROM THE OHIO AGRICULTURAL EXPERIMENT STATION.

FRIEND ROOT:—I have been quite pleased in looking over your journal of the 15th, to see what you say about selecting seed. I have been working in this line here at the station for some time. I have not done much toward the improvement of vegetables, except tomatoes; but I have tried to show the importance of selection, as you may have seen in our report. The character of stock from each seedsman is there commented upon. This has not been undertaken for the purpose of exposing the poor stock of any one in particular, but rather for the purpose of calling attention to the importance of selection in growing seed. We shall continue the work, and enlarge upon it as fast as possible.

My purpose in writing this is to call your attention to the excellence of Mr. Brill's cabbage-seed, especially that of his Early Wakefield. I regard it as the best to be found in the market. Under favorable conditions I am sure that 95% will form marketable heads, and they are remarkably uniform. If you refer to me, perhaps Mr. Erill will send you a better grade of stock than he otherwise would, as he has, as all growers have, what they call stock seed, also ordinary trade seed. He may send you some stock seed. His Early Summer is also excellent, as are all his cabbage and cauliflower seed. Have you tried the Deacon lettuce? If not, Joseph Harris has it. You are doing a good thing for the public in showing what may be done in gardening.

W. J. GREEN.

Columbus, Ohio, July 19, 1886.

Experiment Grounds at the Ohio State University.

Friend G., I presume your kind letter was not intended for publication; but as it will be read with interest, I am sure, by many of our readers, I take the liberty of giving it here. I have never tried the Deacon lettuce, but I will order some at once, and perhaps many of our readers will be glad to avail themselves also of the opportunity. I have had you and your work in mind, friend Green, all along in my work at seeds and plants.

HOW BEES WORK IN THE OPEN AIR IN CALIFORNIA.

A PICTURE SENT US BY THE KINDNESS OF
FRIEND HILLIER.

WE have frequently had reports of bees building combs in trees or among bushes, and living for several months, even where rainstorms are frequent. We have also been told, that in California and other countries where no rain falls for a long period, and comparatively little in the rainy season, that they would live the year round in no hives except the protection afforded by such combs as they could build, and by their own clustering, shedding the rain with their wings turned like shingles. Below we give a picture of such a hive.



A COLONY OF BEES LIVING AND PROSPERING WITHOUT A HIVE.

The following is all the description we have with the picture:

I mail you a stereoscopic view of a swarm of bees at work in the open air, which is no very uncommon sight here. They are hybrids. H. H. HILLIER.
Pasadena, Los Angeles Co., Cal., June 9, 1886.

We think our engravers have done a pretty fine piece of work in copying so faithfully the work of the camera.

A CALIFORNIA BEE-STORY.

TRUANT SWARMS GOING INTO HOUSES IN CALIFORNIA.

I MAY have told you about my brother who lives on a ranch near San Diego, Cal. Well, this brother has never taken much to bees, but lately he has got a notion of trying them. He gives us some of his experience in the following; also the bee-story alluded to in our head:

Bro. Amos:—Last January I bought 4 stands of bees for \$10. As they were in common box hives I transferred them in February, the weather being so warm the combs all ran together, and, I think, destroyed all the queens but one; and after swarming the hive lost its queen, I think, as it is not doing any thing. I put a hive up by the barn, put ten frames in with fdn., and in a few days it was full of bees. I moved it down to the yard, and now they have the frames all capped, and part of the sections filled and capped. I fitted up another hive in the yard as above, and got them full of bees the same as those at the barn. The old original swarm is not doing any thing. Had I better have a good queen?

I imagine the bees here are mostly hybrids, although mine show three yellow bands. During May and June there were swarms passing over almost every day, and some of my neighbors have a good deal of trouble in keeping bees out of their houses. They have asked me what to do to get rid of them.

One Capt. Keen, from New Orleans, left his house here vacant one season; and when he came back he said he noticed his house was settling, and he thought it strange, as he had a good brick underpinning. Finally he went up into the garret, and found it full of bees and honey, and he says he has sent off for teams, there not being enough in this neighborhood, and has taken off 50 tons of honey to San Diego, and has got only a very small part of the whole yet. He says he has glutted the market, so now honey is down to 3 cts. a pound.

The above corresponds with one of his stories. He says he tells them in New Orleans about California bees. Where the bees are taken out of the ground, he says, we have to build a fence around the hole to keep the stock from falling in.

Joking aside, the country around is full of bees. I know of several places where they are in caves on the hills. If I had been at home, so I could have attended to them, I have no doubt I could have had ten stands. Mine are very cross, but I rather like them. I think, as you say, bees are very good-natured.

There is a near neighbor of mine, Mr. Little, who keeps 250 stands in common boxes, with a stick across and box on top; and when the top box is full he empties the contents in a solar extractor, and sells wax and honey. I am told he got \$800

for his wax and honey last year. He says he does not know any thing about bees.

I stayed with Capt. Knowles, on the San Diego River, last winter. He says there is more clean cash in bees here than any thing else, if a man understands it. He does not fuss with them as much as you write about. If a swarm gets weak he lets them go. He says his time is worth more than the bees. He uses part Simplicity hives and part Harbison's; but he likes the Simplicity the best of all, and would use all Simplicity but it is too much work to transfer them. He has three apiaries, and I think about 1000 swarms. I am situated so I think I can keep about 200, with plenty of room for forage.

I am going into the "New Agriculture" some. I am never so happy as when I have domestic pets and plants and vegetables growing. I can almost compare my "mountain retreat" to Robinson Crusoe's island.

M. S. ROOT.

San Diego, Cal., July 11, 1886.

BOOK-REVIEW DEPARTMENT.

COOK'S MANUAL OF THE APIARY.

I SHALL not attempt to give a review of the whole work, but will confine myself to the new matter which has been added, or, rather, as I judge, substituted, in place of something else.

If I am correct, there are about 25 pages rewritten in the new edition, the major part of which pertains to the

HEDDON-LANGSTROTH HIVE.

how made, and how to use. This is the hive that the professor has tried, and *knows* to be practical. After enumerating its good features, one is made to feel almost sorry that Heddon did not let well enough alone, and stay content with his old hive; but as Prof. Cook follows the safe rule of never recommending what he has not tried, though recognizing in theory the good points of the new hive, it is easy to see why he speaks in praise of the old hive. Of it he says:

Thus I have described the Heddon-Langstroth hive minutely, as with W. Z. Hutchinson, W. L. Taylor, and many others of our most able and intelligent apiarists, I find it upon trial as excellent as it is simple. Surely, when we can harness excellence and simplicity together, we have a most desirable team. The simple union of parts by mere plain contact of the edges, or the cover simply lying on the hive, while it is just as acceptable to the bees, makes the hive far more simple of construction and easy of manipulation. The honey-board and bee-spaces keep all so neat, that, as one bee-keeper well says, their extra expense is very soon saved in the saving of time which their use insures. Any who may think of trying this hive had better do as I did, try two or three at first, and see if in their judgment the "game is worth the candle."

REVERSIBLE FRAMES.

Prof. Cook's experience with the principle of reversing frames in general, accords quite closely with ours as recorded in the department of Our Own Apiary of the two last issues, and I feel sure he is right when he says:

For the past two years I have used the reversible frame which I find so valuable that I shall use it largely in future. With this frame there is no danger of the top-bar sagging, which is sure to enlarge the bee space above and create mischief, and by inverting we secure the firm attachment of the comb to the frame along all its edges, and can force our bees into the sections at the very dawn of the honey harvest. * * * * These frames [Heddon's]

reverse very easily, and I do not know a single person who has thoroughly tried them, who does not value them highly. Here again let me suggest that in making changes, a few be tried first, and not all till we know we wish them.

Notice in this and elsewhere, that he recommends trying only a few. While I *now think* that the advantages of the reversible frame are such as to ensure its ultimate adoption, nevertheless I regard the caution of trying a few first as a wise one. Many of us like the principle; but some of us, by reason of our difference in make up, might not so regard it. Friend Pond, I believe, belongs to the latter class.

THE NEW HEDDON REVERSIBLE HIVE.

About three pages of new matter is devoted to this hive, and I will insert below what Prof. Cook says of it, omitting the description, which has already appeared in GLEANINGS. He says:

Mr. Heddon has just patented and offered to the public a new hive which combines in principle the Langstroth and the Huber. I have never tried this hive, and so, guided by the rule I have always adopted, I do not recommend it. Yet the experienced bee-keeper can often judge correctly of what he has never tried, and I will add that I fully believe this hive, and the method he gives of manipulation in his valuable book, are well worth our attention. Mr. Heddon is so able, that he rarely recommends what is not valuable. Several others have tried this hive and speak in the highest terms of its value. Among these is no less an authority than W. Z. Hutchinson. At the beginning of this chapter I caution all against patent hives. This is necessary, as so many frauds have been committed under this guise; but if Mr. Heddon has given us something as valuable as it is unique and original, he well deserves a patent, which should be thoroughly respected, as should all worthy inventive effort.

The points of excellence claimed for this hive, and I believe from my experience that they are valuable, are easy contraction of brood chamber, quick inversion of the brood chamber or section case, ease and quickness of manipulation, and the interchangeableness of the brood chambers forming the hive, the power we have to get all light-colored honey in the sections if we so desire. Mr. J. M. Shuck has also patented a hive for which he claims the same advantages gained in the new Heddon hive. I have not seen this hive, but recognize in Mr. Shuck an able bee-keeper and a man of rare inventive genius.

On pages 88 and 89 is described the use of the curious little notch found in the fore legs. That our readers may better understand, we reproduce the cut, which appears below.



ANTERIOR LEG OF WORKER, MAGNIFIED.

This little notch, or flute, is shown at C; and in speaking of its use to the bee, the writer says:

On the anterior legs of bees, between the tibia and tarsus, is a curious notch, C, covered by a spur, B. I have found this in nearly all Hymenoptera, except the saw-flies, where it is very abortive if present at all. This is principally used in cleaning the antennæ, as is easily proved by dusting these organs with chalk, pollen, etc. This cleaning of the antennæ is best studied by observing wasps. After scraping off the antennæ the leg is cleaned by drawing it between the mandibles, or between the joints of the middle legs.

In the previous edition, if I am correct, Prof. Cook was not certain as to the real use of this little notch, though he suggested that it might serve various purposes. To satisfy myself I dusted the an-

tennæ of several bees with flour, and noted the results. The movements of the bees were so quick that I could not determine exactly how it was done. Whenever the antennæ, or feelers, were dusted, they were quickly cleaned; but how? With a magnifying-glass, after the antennæ were thus cleaned, I examined closely the little notch at C. It did not take long to discover there the wheat flour, which evidently had been scraped off the feelers. After repeated watchings, a bee finally moved his leg so slowly that I saw exactly how it was done. I further tested the matter by besmearing the antennæ with honey. The same result followed as before. As the power of delicate touch, and, by some authorities, hearing and smelling as well, is supposed to reside in the antennæ, it is highly important that these organs be kept perfectly clean by some such contrivance as that shown at C.

These, I believe, are all the important changes made in the latest edition. It is to be regretted that the new matter has been set in a slightly different-faced type, rather marring the appearance of the page where the two kinds of type (though both are supposed to be "long primer") come together in contrast. This is brought about, I suppose, by the fact that the book has been printed at two different offices, each of which had its own kind of long primer type. However, to any one not a printer, nor interested in printing, I suppose this difference in type would not be apparent.

ERNEST.

TROUBLE AT THE HOME OF THE HONEY-BEES

For the thing which I greatly feared is come upon me, and that which I was afraid of is come unto me. —JOB 3:25.

DEAR FRIENDS, when I told you in our last issue that we had Canada thistles on our plantation, I had no idea that I should be obliged to chronicle, in a few days more, that we had foul brood in our own apiary. I have for many years feared that, sooner or later, something of the kind would happen, and I once told our good friend D. A. Jones that I could think of no calamity so dire as this. He told me not to worry, but that, if we ever got it, to write to him and he would come down and cure it for us for nothing. You know that is just like him for all the world. Well, we have not taken up this kind offer, for the reason that the disease as yet has made its appearance in only ten colonies out of over 400; besides, according to his description in his little book, "Foul Brood, its Management and Cure," it is not the real *virulent* foul brood, but what he defines as "'dead' brood." The larvæ die at different stages, and either become soft and pasty, or dry up in the lower side of the cell. The sealed brood has usually pinholes through the cap, but the cap is not sunken. The well-known disagreeable smell accompanies it, and this alone tells when it has got a foothold in a hive. Do you want to know what we have done? Just this: Every comb in every hive containing even a trace of it has been burned up by throwing them all in the furnace under the boiler of the engine. We are going to starve the bees until the contents of their honey-sacks are nearly or quite

exhausted, then, put them on good new combs. The hives will be thoroughly scalded by a jet of steam from a rubber hose. Meanwhile we will fill no orders for bees, queens, or brood, from our apiary, unless our customer has seen this sheet, and expressed himself willing to have his orders filled from our apiary from colonies that have never shown a trace of it. Orders as they come will be filled promptly, as usual, from the apiary of Neighbor H.

Now, then, how did it come about? I can not tell, unless it was from honey we had purchased — possibly from a leaky barrel; and this has decided us never more to purchase honey in barrels. It must be in tin cans; and should any leakage occur from these they are to be mended and washed before the bees can have a chance to gain access by any possible means to the outside of the cans. It may have been brought to us in another way. We are purchasing wax constantly, and it comes from almost every quarter of the globe. The wax cakes often contain more or less honey daubed on their surfaces, and sometimes a bee or two gets into the wax-room and goes to work on these wax cakes. By the additional room given us by the building of our new factory, we are going to have all wax taken in the original packages at once to a darkened room. The wax is to be so thoroughly protected, both by doors and windows with wire cloth, that no bee gets outside or inside alive. Some may ask why we should not cure the foul brood, instead of resorting to such destruction of valuable property. If I had only a few hives, and could give them my constant supervision, some such plan might answer; but as it is, I prefer to burn up every thing it has touched until no further trace of it can be found. We are going to treat it as we did the Canada thistles; and may God help us to conquer, for *your* sakes as well as our own.

I feel quite certain that there will be no possible danger of the disease being transmitted by selling queens, or even pounds of bees. It is, however, everybody's privilege to decline buying from an apiary where foul brood has existed, if you wish. In regard to the chances of contagion, even by taking queens from diseased colonies, we make the following extract from D. A. Jones's little book referred to above:

I have never yet known the disease to be contracted by either queens or drones, although I have experimented largely in that direction, taking queens from foul-broody colonies and placing them in healthy colonies. I was once informed by one of the best bee-keepers in the United States that he had tried the experiment scores of times; that is, selling the queens out of healthy colonies, and replacing them with those from the worst affected foul-broody colonies, and in no instance did the disease appear in these hives, the apiary being three miles from the one in which the diseased colonies were. The gentleman had several bee-farms. I do not mean to assert that the disease *never* has been carried by queens or drones, but I honestly believe that if it *has ever been* the case, that the honey taken with them had *something* to do with it.

Please remember, friends, there is not a cell of foul brood now in our apiary—at least, none that we can discover; and every comb of our over 400 hives has been carefully scrutinized.

PREVENTING SECOND SWARMS.

TEN QUEENS IN A COLONY AT ONE TIME.

ABOUT two years ago, if I am not mistaken, Prof. Cook gave a method of preventing increase of colonies by swarming. Briefly, the plan was to remove all queen-cells and two frames of brood from the colony that cast the last swarm, and then hive the new swarm in that colony. I have tried that plan for three years, having practiced it one year before the publication of Prof. Cook's article. Generally the plan has been very successful; but in one respect it has proven a failure. To prevent misunderstanding I will give my plan in full. After warm weather began, so that the bees could fly, I began feeding to stimulate brood-rearing, so as to have early swarms, and most colonies swarmed in fruit-bloom. Probably all would if I had not put more frames in some of the hives, giving the bees more room.

When they began swarming I would remove all queen-cells from the hive that cast the last swarm, take out two frames of brood, and give to some nucleus, replacing them with empty combs, and put the next swarm in that hive. If I had not put on any crates I did so at once. If a crate was on the hive I put on another. My queens are all clipped. As for swarms coming out in fruit-bloom, the plan was a success. No fighting, no after-swarms; the queens were all accepted at once. About once a week I looked through for queen-cells, but seldom found any. But after white clover was in bloom, the old stock and the swarm would go to fighting unless I smoked them thoroughly, and the queen was killed in every instance. This has been my experience for three years. Not a queen has been killed before the bees began to work on white clover. Every one has been killed after white clover began. I should like to ask if any others have had like experience.

On the 17th of May a colony cast a swarm. I caged the queen, moved the hive around, and put a new hive on the old stand. When about half the swarm had entered, another colony cast a swarm—a second swarm, as I had purposely left the queen-cells in. This swarm at once began to enter the hive with the other. I caught the queen, and let the two go together. I gave them a frame of brood with eggs, and did not look at them for more than two weeks. Then on opening the hive I found 12 queen-cells, 7 of them open. On further search I found three young queens on the frame. Of course, I thought the queen was dead; but, to my surprise, on the third frame I found the old queen and a young queen on the same side of the comb, and another on the other side. On the next frame were the other two. The next day I found two more queens, and the next day another, which had hatched the previous day—ten live young queens in one hive! Can you equal that? The colony from which the larger swarm came last year, I “unqueen,” and they sealed 33 queen-cells on one frame. The colony cast a swarm, and that is the one that cast the second swarm. I unqueen them this spring, and they built and sealed 29 queen-cells; so queen-raising would seem to be hereditary in that colony.

As so much is said on folding sections, let me give my way. Take a board about 12 inches long, 6 wide, and one thick. Cut off one end perfectly square; nail on a piece of board about five inches

wide and as long, so that it shall make an exact right angle, and be exactly as high as a section; $4\frac{1}{4}$ inches from this, nail a cleat on the bottom board. Bend the section in the middle, and put the corner thus formed against the cleat; press the sections into the angle formed by the upright; now bend the top down, and one blow of the mallet will finish the section. After a few minutes' practice, the section can be pressed into the form, ready for the finishing tap, as quickly as it can ordinarily be bent together, and it is hardly possible to bend one out of true.

S. J. BALDWIN.

Nelson, Ohio, June 25, 1886.

Friend B., you have got a queen that seems willing to permit young queens to be reared in the colony without molestation. Such queens are found in almost every apiary, every little while, and they are very valuable for queen-rearing, inasmuch as we can rear queens right along and still have a queen constantly keeping the hive populous. Such queens would be as great an acquisition to the bee-keeper as non-sitting hens are to the poultry-raiser. The matter has at different times been pretty thoroughly discussed in our back volumes. By all means, save every one of those queens, and see if you can't get a strain of bees that will allow several queens in a hive all at the same time. A race of queens that won't quarrel! just think of it, friends! what an acquisition it would be! and I feel just as certain that it can be managed as that we can get a strain of kohlrabi-seed or cauliflower-seed that will give plants true to name every time. Prof. Cook has for a good many years scolded because we don't try to improve our queens, instead of trying to produce them so cheaply. Why can we not do for bees just what the world is doing for small fruits, garden vegetables, and the like?

QUEEN-EXCLUDING HONEY-BOARDS.

CARNIOLAN BEES, ETC.

THE value of perforated zinc in honey-boards, I have this season established to my full satisfaction. The question had been, Is it not an obstruction to the work of bees in supers? I can now answer that it is not. Its introduction to bee-keepers has made possible several new inventions in hives that, without it, would be quite impracticable. By its use, surplus-receptacles can be placed over very shallow brood-chambers with success; and, if desirable, we can take in marketable shape almost every drop of honey a colony can produce. In the spring we can build up colonies, and enlarge the brood-nest to the full capacity of the queen; and then at the right time we can limit her work and prevent the rearing of non-producing workers to any desirable extent.

The feature of greatest merit in the new Heddon hive is the horizontally separable brood-chamber; and my experiments so far this season have proved that it is worthy of all the praise that has been bestowed upon it. But, as predicted in GLEANINGS for March 15, it is impracticable to use such a hive on the contraction plan in the production of comb honey without a queen-excluding honey-board. Three years since, I found that it was im-

practicable to contract brood chambers to any great extent without limiting the queen, and then I made my first wooden queen-excluding rack, and at the same time tacked narrow strips of perforated zinc on a slatted honey-board. The latter worked very nicely, and, in fact, the wooden one did very well, as also a rack prepared with long strips of tin; but the metal could not be held properly with brads, and so last season I conceived the idea of making saw-cuts in the edges of the slats with a thin circular saw, and inserting the zinc in them. This plan of using the zinc, I found to work perfectly; and I believe that I was the first to conceive the idea, as well as to construct a honey-board of this kind. Certainly I was the first to make it public, and think I am fully entitled to give the invention to the public as I have done. After testing the invention I sent a hive to the Michigan State Fair, having such honey-boards, and it is just possible that my friends there who claim to have been original in conceiving such use of the zinc had there seen my invention and forgotten about it. I believe, however, that these friends do not claim to have constructed such a honey-board before this time—only to have conceived the idea.

After a number of trials I found that the strips of zinc work the best when cut wide enough to make three rows of perforations. The slats were made nearly as wide as the strips of zinc. My new hives have all been made *narrow*, to hold only 7 brood-frames in each case, so that the honey-board is only 10% inches wide. It is essentially the new Heddon honey-board, made substantially as friend Hutchinson describes on page 527. As I now construct it, it has 4 of the strips of zinc, giving 12 rows of the perforations for the bees to pass through; but in the honey-board, made with 7 slats to correspond with the frames, I could get only 8 strips of the zinc in, making only 8 rows of the perforations.

In the *C. B. J.* for June 23, this honey-board is illustrated; but if made as there described, part of the perforations will be useless, from the zinc sinking too deep into the saw-cuts. Again, the use of the cross-bar in the middle is unnecessary, as there is sufficient rigidity of the board without it; and I make the slats only 5-32 of an inch thick. In cutting up the sheets of zinc we cut out every fourth row of the perforations, leaving the solid strips of zinc whole. In making this new honey-board I have used friend Root's new perforated zinc with success, and am able to recommend it to bee-keepers as perfectly adapted to the purpose designed.

THE CARNIOLANS.

Dr. Morrison inquires about the quality of the workers of the queens he sent me last fall. She proved to have mated with a Syrian drone, as he had anticipated; and the workers, though well-marked hybrids, were fully as gentle as Italians. The queen was very prolific, and filled the equivalent of eleven L. frames with brood, and then led a swarm June 9th. Sections had been adjusted, and a start in them made. The swarm was very large. After filling a space equal to 8 L. frames they began in the supers, and have made to date, in black-walnut sections, 40 lbs., and the parent colony as much more, and they will raise the amount to 100 lbs. They reared about 50 queen-cells and an innumerable quantity of drones, although they had not much drone-comb. All were jet black; and as I did

not wish them to cross with my white queens I opened the hive and destroyed them. The comb honey produced was capped very white, but not whiter than that made by my own strain, some colonies of which have already made 125 lbs., and will probably reach 150, which I consider a large yield for an exclusively white-clover district.

The queen obtained from GLEANINGS office at the same time as Dr. Morrison's, was striped and very pretty. Her workers appeared like Italians, with an occasional black bee. The drones were also like Italians, with some quite dark. This queen also led a swarm about a week later, was very prolific, and left 48 queen-cells. Both colonies were in the new Heddon hive, and every one of the queen-cells was built from the edges of the bottom-bars, so that, on separating the hive, we found them all sticking straight out, ready to be cut off. It beats the Alley plan of getting queen-cells, all hollow.

The swarm having friend Root's queen has made only 20 pounds of surplus, and the old colony nothing, although all the frames were reversed, and the brood raised against the sections. These bees are evidently not fair representatives of the Carniolans; but Dr. Morrison's are good workers, and I have reason to think the Carniolans are generally. It has been alleged, that they are given to much swarming, but I doubt it. The yellow specimens of the race that now and then crop out should be destroyed. Especially ought all yellow-marked drones to be destroyed by the breeders of these bees, and the race kept pure.

DR. G. L. TINKER.

New Philadelphia, O., July 8, 1886.

We are much obliged for your candid and impartial opinion of the Carniolans. However, as Dr. Morrison's queen was crossed with a Syrian drone we can hardly determine whether the results would have been equally good had the progeny of the queen been pure Carniolans. We are glad to note that the crosses of the Carniolans are not cross. As your experience with the strain of Carniolans which we have in our apiary coincides with our experience, we think we were right in saying that they were inferior workers. We are glad to hear that the strain Dr. Morrison keeps has done much better.

Please accept our thanks, doctor, for the beautiful workmanship on your queen-excluding honey-board sent us. We may have an engraving of it made. These honey-boards, made partly of wood and partly of zinc, promise to be an important implement in the apiary; and since the subject is up, we give below an article from friend Heddon, which we extract from the *Canadian Bee Journal* of July 7. Dr. Tinker already alludes to the cut of a honey-board, given in the *C. B. J.* for June 23. It seems that many minds are working on this very thing; and although the different experimenters have different ideas, as usual, we think we shall ultimately come along to what is pretty nearly common ground. Below is the article from friend Heddon:

HONEY-BOARDS.

Referring to your "Own Apiary," page 245, where you illustrate a queen-excluding honey-board of combined wood and metal surface, I will say that we are experimenting on an extensive scale with these boards, the idea of metal strips being let into grooves in the sides of our honey-board slats having originated with at least four different persons a

year or more ago. I may name Dr. G. L. Tinker, who wrote about it not long since; C. E. Boyer, my foreman; W. Z. Hutchinson and myself, neither being aware of the other's device, and all giving it to the public. Here we are using it as follows: We make our wood slats the same width and thickness as ever, leaving the spaces between them the same three-eighths inch, and slide in metal strips having one row of openings only, and these strips we get made to order, with their edges all smooth and whole, and I can not see how smooth edges are secured by cutting strips containing "two rows" of openings, any more than a strip of only one row, which leaves the jagged edges, which work just as well in the boards, but are more trouble to insert. My experience and observation with bees fully convinces me that one row of openings over the center of each top-bar, below will give far more than ample passage room for the strongest colonies. I will tell you why I object to using metal strips wide enough to contain two rows of openings: It necessitates, as in friend Hall's case, five-eighths space between the slats. Now, if the bee-space is right between the surfaces of the slats and the surfaces above and below them, of course it is about one-eighth of an inch larger between the surfaces of this metal and the surfaces above and below it. I think we should be more apt to be troubled with brace-combs where we used two rows of openings, than where we used one, as I have it. I am not sure but quarter-inch between the slats would be better than our three-eighths. I can tell at the close of this season. I have used brood-frames with top-bars three-eighths inch thick, and varying in width from thirteen-sixteenths up to one and one-eighth inch, and I have found brace-combs built between their edges to a greater extent in proportion as the bars were wider and the spaces narrower; but this kind of bracing is between the edges of the bars, and not between their surfaces and other surfaces above and below them. In testing some thirty-all-wood queen-excluding honey-boards, made so by widening our quarter-inch slats till the spaces between them were the same as metal openings, in width, we were astonished to find that the bees built comb in these spaces till two thirds of the passageway was stopped. We tried them two seasons, realizing this and other disastrous results, and have discarded them entirely.

HEDDON'S HONEY-BOARD.

"What is it?" I receive many questions like this. Will you kindly let me reply to many at once? An implement, machine, or manufacture, may take its name from him who constructed, devised, or invented it. A device may or may not be an invention; and it is a question as to whether placing these strips of metal in grooves in the slots can be called an invention or not; but whether it is or is not, it is certainly a device, and preferable to nailing it on to one side as before. My honey-board contains two important features, each of which performs very useful functions, and which I invented some eight or ten years ago. 1. Arranging slats within a frame or rim, in such manner that one of their surfaces shall be even with one surface of the rim, while their other surface shall be a bee-space lower than the other surface of said rim. This gives us a honey-board containing a bee-space within itself. The rim gives it solidity, when the slats are made as thin as quarter-inch, as we make them. 2. Arranging slats, forming a honey-board, in such manner that the center of each slat shall run parallel with, and rest directly over, the space between two brood-frames below, and the center of the top-bars below shall come directly under the spaces between the said slats. Any honey-board that contains neither of these principles is not a Heddon honey-board; but one that does contain either of them is. Extensive and repeated experience with these boards not only gives me the knowledge that their usefulness by far outweighs their cost and manipulation, but they are in no way whatever any detriment or hindrance to the bees and their work. You will notice that, by fitting your hives and supers to a honey-board containing a bee-space, the same can be used without the honey-board, all bee-spaces remaining as perfect as when used in connection with it. This honey-board has never been patented, except in combination with my new hive, as described in past numbers of this journal. It is used and highly prized by such producers as Dr. C. C. Miller, R. L. Taylor, W. Z. Hutchinson, Prof. A. J. Cook, and scores of other equally expert bee-keepers, less

known to the public. I am confident that it has come among us to stay. JAMES HEDDON.
Dowagiac, Mich.

Below we give an engraving of a honey-board made on Heddon's plan, fitting the Simplicity hive.



QUEEN-EXCLUDING HONEY-BOARD, ARRANGED SO AS TO HAVE THE OPENINGS JUST OVER THE TOP-BARS OF THE BROOD-FRAMES.

The engraving shows the honey-board with the smooth or level side uppermost. The wooden slats are 1 inch wide, and a little less than $\frac{1}{4}$ inch thick. The spaces between them are $\frac{3}{8}$ inch. The end-pieces to which the ends of the slats are nailed were originally $\frac{3}{4} \times 9-16$. A rabbet is made in one corner of this strip, $\frac{1}{4} \times \frac{3}{8}$. For use on the Simplicity hive there is no frame clear around the honey-board, as Heddon has them; that is, the honey-board is composed of simply the end-pieces and the slats. It is put on the hive with the bee-space downward; and as our crates are all made with bee-spaces under the sections, when the case is set directly on the honey-board it comes all right. The price of these honey-boards is 25 cents each; \$2.00 for 10, or \$18.00 per 100. If wanted by mail, add 22 cents additional for postage.

CARNIOLAN BEES GREAT WORKERS.

ARE THEY A PURE RACE?

JUNE 3d I put a swarm of Carniolan bees into a two story Simplicity hive with 20 frames filled with wired Van Deusen foundation. In eight days after that I extracted, from the upper story, 43 lbs. of white-clover honey, and left the lower ten frames filled with honey. On the 17th of June I extracted, from the same combs, 38 lbs. more; and then to see if Carniolans would get tired of drawing out foundation I gave them ten frames again, filled with Van Deusen flat-bottom foundation. Yesterday, July 8, I extracted 50 lbs., capped, as white as snow, from these same frames of foundation, and the ten combs below are still full of brood and honey.

THAT QUEEN OF ILLA MICHENER'S NOT PURE CARNIOLAN.

Your publication of Illa Michener's letter gives me a right to a reply. I do not believe he has a Carniolan queen, and some time since I wrote him to this effect. I may have made a mistake, and sent him a hybrid Italian last year. If I did, it was not the result of any less care in breeding queens than is exercised by the most careful. As an instance of how such a mistake may occur: A few weeks since, I put an after-swarm into a nucleus hive with foun-

dation and one frame of brood. Two days after, I removed the virgin queen, intending to give a Carniolan virgin the next day; but the next day, on examining the colony I found another virgin queen. Now, suppose I had run my Carniolan queen into that nucleus without knowing that other queen was there, wouldn't I have sent that other queen to Ila Michener or somebody else in ten days? This is but one instance of how a mistake *may* be made. I know of others, and am convinced that, with all the care the most careful breeder may give the business, errors will happen. Probably less likely, but yet possible, the receiver of a good queen may lose her and not know it. For instance, I removed, a few weeks since, a queen from a strong colony, where I had placed her some days previously, to a nucleus hive in a distant part of the yard. Three days after, I found a laying queen in this same hive. There is positively no mistake as to these statements. Now, suppose I had smoked this colony and given them a queen on the third day, not having found the other queen, accidentally, and on the fourth day "found her laying," wouldn't it have been another queen? and wouldn't I have sent a complaint to GLEANINGS that somebody had imposed on me? I have seen a great many other methods through which mistakes may happen on the part of the breeder or the buyer of queens, for I do the whole of the work in my apiary; and keeping a written record on each hive I have often seen these anomalies.

Some time before seeing Ila Michener's letter in GLEANINGS I wrote him in substance as above, and offered to send him another queen, but have had no reply. My offer still holds good to him, for he is doubtless one of our "square" men.

"If they are not a pure breed, would it not be best to drop them right where they are?" This is your question on page 548. Now turn to page 527 and read from W. Z. Hutchinson about the "Swarming-out Mania" of Italians — real Italians, and not hybrid Carniolans (to say the best we can for Ila Michener's); then read what Mr. Robbins says about his inability to prevent excessive swarming, on p. 510; then the "Swarming Mania Raging," by John Nebel & Son. If this is the trouble Italians are going to give us, would it not be best to drop them just here? Oh, no! I am satisfied that my Carniolans are fully equal to Italians as workers; and that, either purely fertilized or fertilized with Italian drones, their workers are much gentler and pleasanter to work with than Italians, and these are the qualities I want. I don't give much for the dress or adornments of bees.

"ARE CARNIOLANS A PURE RACE?"

I can't tell. Ask Mr. Benton or some other reliable person on the ground. He says Italians are not a pure race, and that settles that question. I can only say that my imported Carniolan queen produces no progeny with yellow bands; but they are of a uniformly steel-gray color.

GETTING BEES TO WORK IN SECTIONS.

GLEANINGS for July 1 contained the most directions I know any thing of. If I want increase of bees I give all the comb and foundation in the brood-frames I can get. If I want work in sections I put into the brood chamber — one on each side — two wide frames filled with sections full of comb or foundation, and, between these, seven frames with an inch starter of foundation, and set on top of the hive a combined shipping and honey-crate (I never

use these for shipping honey) also filled with sections full of foundation. I am never more certain of honey in sections than when a swarm of bees is put into a hive arranged as above.

S. W. MORRISON, M. D.

Oxford, Chester Co., Pa., July 8, 1886.

We are very glad to get so good a report from the Carniolans, especially as our experience with them has been rather discouraging. It would seem that you have a better strain of these bees, friend Morrison (see in the article above, what Dr. Tinker says of the comparative working qualities of *our* strain of Carniolans and yours). We often notice the same difference between different strains of Italians; and it would be nothing strange if Carniolans were like them. Before the clover bloom, and before the imported Carniolan colony had cells started, or had any thoughts of swarming, they were more than once on the eve of starvation, while the Italians were supporting themselves easily. Even when the honey-flow commenced, although the Carniolans were making no preparations to swarm they did not begin to fill the combs in their brood-chamber, though it was a large colony. When the statement was made, that they were poor workers, it was done because we felt it our duty to do so, even at the risk of spoiling our own trade in untested Carniolan queens. We have not, and do not now claim, that, because *our* Carniolans were inferior workers, therefore *all* are. Indeed, Dr. Morrison (whose statement we have no reason to doubt) has a strain of these bees that are good workers. If any are desirous of securing a Carniolan queen, we would with pleasure recommend them to him. In favor of the Carniolans so far as we have observed, we will say this: They are very quiet, easy to handle, adhere to the combs, are good breeders, little inclined to propolize, and are, perhaps, a trifle larger than the average Italians. In disposition they are quite different from blacks; but nevertheless in *appearance* they very much resemble them. In fact, it seems that Dr. Morrison himself does not always distinguish the difference, or he would not have made the mistake in sending a *hybrid* queen to Ila Michener, when he intended to send a *Carniolan*.

ERNEST.

ARE DRONES FROM A PURE MISMATCHED QUEEN PURE?

SOME VALUABLE FACTS FROM FRIEND SWINSON.

FRIEND ROOT:—On page 545, in your foot-notes, replying to F. Clare, as to hybrid bees, you state that drones from a pure Italian queen, which has mated with a black drone, will be pure Italian drones, which, then, would be just as good as drones from an imported Italian or any other Italian queen. I have read this same thing repeatedly, from different parties for the past four years; but I found, on trial, that it won't work according to theory, worth a cent. Why, friend Root, if this were so there is no need of a man having 25 or 30 colonies to Italianize to buy more than two pure Italian queens to do it.

In 1884 I had 20 to 29 colonies of blacks, except 3 pure Italians. In May I killed all the black queens,

and reared in each hive an Italian queen; these, of course, were nearly all mated with black drones. In August and September, after all the black drones were gone, and nothing left in the apiary except pure Italians and drones from these pure mated queens, I again removed all the hybrid queens, giving cells bred from the pure stocks, as before. Now, when the progeny of these queens hatched out they should have been pure, according to this theory; but, not so; they were nearly every one hybrids, as in the spring trial, except that none of the progeny were full black bees, as in the first cross, but they were from one to three mingled-banded bees, such as hybrids always show more or less of. They were exactly what C. Kingsley sent me last spring as tested Italian bees—nothing but hybrids, yet pure, according to the theory. I continued to breed up queens, and have them mated to these drones as late as I could; and, not being able to produce pure Italians in that way, I sent off and bought 20 odd queens of S. D. McLean, of Tennessee, and introduced them in place of these queens mated with drones that were bred of pure queens mated.

TO START BEES TO WORK IN SECTIONS,
Or any part of a hive you want them to go to work in, is a very simple thing to do, if they are working anywhere. This is the way: Take a piece of comb having sealed and unsealed brood in it, and place in one of the sections which you want them to occupy—box or any other contrivance you want honey stored in, and they will certainly go to work around it; they won't desert brood and larvæ as they do honey placed up in sections to start them; and as soon as they get well started and under way you can remove the piece containing brood. This is a never-failing remedy; it will start the most obstinate colonies, and is very simple and easy of trial.

CARNIOLANS.

They do show bees having two yellow bands, and even an occasional one with three; but they are a smaller and more reddish-looking bee—rather dwarfish-looking fellows compared with the regular Carniolan workers; so, at least, do the Carniolans I got, and they, too, are from imported mothers, two of which were sent me by Mr. Benton in August and October last, as first-grade queens. They are very gentle indeed—good workers, but they make little show for it in their hives, in the way of surplus, as they are such excessive breeders that they use more than most bees do in breeding. This is the only reason I can give to account for their lack of stores, as they certainly do work well. They just teem with fertile workers, if made queenless for six or seven days. They have plenty of fertile workers in their hives, even when having a queen hatched in it several days old. They beat Henderson's Syrians for fertile workers. 4—A. L. SWINSON, 71—72.

Goldsboro, N. C., July 5, 1886.

Friend S., I do not see that you demonstrate at all that the drones from pure Italian queens, when crossed with a black or hybrid, are *not* pure Italian. The theory was first propounded by Dzierzon, and then verified by that careful experimenter the Baron of Berlepsch; and, if I am correct, it has not been proven untrue as yet. Your experiment upon the point in question is faulty, in that there might have been, and probably were, black bees within your immediate vicinity. Besides, it seems to me you could not prove there *were* no black bees

near you. At the bottom of your letter I see you have been in the business for four years; so at that time (1884) you could hardly have Italianized the wild bees in your vicinity.—The plan you mention, of inducing bees to go into sections, is the same as that mentioned recently by Doolittle.—Your experience with the Carniolans is similar to ours, that they make little show of honey in the hives. Ours, however, do not even seem to work well. If Carniolans teem with fertile workers when queenless, it certainly is a bad trait. As we have raised no queens from our Carniolans, we have not tested them in this particular. I would recommend you, friend S., and all others who feel undecided about the drones from pure mothers, to go over again our little book called the "Dzierzon Theory." It is mailed on receipt of 12 cents.

CARNIOLAN BEES, AND ARE THEY GOOD WORKERS?

FRIEND J. B. MASON TELLS HIS EXPERIENCE WITH THEM.

IN GLEANINGS for June 15, Ernest strikes a blow at the Carniolan bees, pronouncing the verdict upon them as worthless, as he says they are poor honey-gatherers, and concludes by warning the friends about investing in them. This seems hardly fair to pronounce judgment on this race of bees in that way, until you had tested them further than one or two queens, especially as I believe Mr. Benton held that there must be some mistake about one of them. Had I judged the Italian race of bees by the three first queens I ever had, or from two that I bought later on from a very prominent breeder, I fear I should most surely have condemned the race, for they were as near worthless as Ernest describes the Carniolans. They were not self-supporting; and from the reports of others I at once decided that there were better Italian bees than I had got; and after procuring some from another strain I found a vast difference in them.

For two years past I have been testing the Carniolans, and I must say I have found them superior in all respects to the Italians for comb honey. My Carniolans do not show yellow bands, as Ernest speaks of, and they have no lazy or sluggish actions, but are among the very best workers I have ever seen. They are certainly better comb-builders than any Italians I have ever had, and build whiter combs, and take to the boxes more readily; and as for gentleness, they are gentler than any I have had. If one wishes for nothing but extracted honey, perhaps there may be none better than the Italian bees.

It is evident to my mind, that these so-called Carniolans that have bands are hybrids. You may say they were imported. Well, the next thing is, are there no hybrids where they were reared? I received two imported Italians from a dealer whom I think you would pronounce perfectly honest; but I pronounced them both hybrids, and I will bet a trifle they were. A. I. Root pronounced them so, as I sent a sample of the bees.

In July 1st GLEANINGS, Ila Michener speaks of procuring a queen of S. W. Morrison, and he says she was a hybrid, temper not excepted. Well, now I should ask, Did not S. W. Morrison sell her for a hy-

brid or an untested queen? Mr. Michener asks if we are not being imposed upon, and getting back our old bees again. I answer, no; the characteristics of the Carniolans differ as much from the German bees as do the Italians. I think Mr. Michener has no need to regret that any of the Carniolan blood has been introduced into his apiary, provided comb honey is his object. I believe, friend Root, if you hold your judgment on these bees until you have tested them further, and until you get the reports of those who are now testing them you will have good reason to change your views on them. Will you please allow me to send you a Carniolan queen to test, and give a report what you think of her? J. B. MASON.

Mechanic Falls, Me., July, 1886.

You are right, friend Mason. It is hardly to be expected that the workers from two queens would be a fair test of the race in general; but if you will turn back to the article to which you refer you will see that it is so stated. Perhaps we were a little hasty in drawing deductions; at any rate, see what Abbott L. Swinson says of them. We are ready for reports now from others; and as it is hard to tell definitely from the worker-bees raised from the daughters of the imported Carniolans, I should like to have reports from the worker-bees from the *imported* Carniolan queens themselves.

THE FIRM OF JANE MECK & BROTHER.

A Serial Story in Ten Chapters.

BY EV. W. D. RALSTON.

CHAPTER VIII.

BRIGHTENING PROSPECTS.

TOMMY thought over their debt day after day. It worried him. He knew, from talking with his father, that they should need at least seven new hives and ten pounds of foundation for another season. This would likely increase their debt to thirty-six dollars, before they would have any honey to sell. In the wood-shed was a carpenter's bench and a number of tools, for Mr. Meek liked to work with lumber. He also allowed his children to use his tools, and had often instructed them in the use of these tools.

One day Tommy had been at work making a rabbit-trap, and had just finished it when Jane came in after some wood. She looked at the trap, and admired it very much, and then asked, "Why could you not make our *hives*?"

Tommy said, "I believe I could, if father would let me use that planed lumber that is upon the joists."

When they asked their father, he said, "If you make hives that will answer, you can use the lumber, free of cost, and I will also furnish you nails; but if you merely waste my lumber and nails, or make some old rattle-box of a thing, and call it a hive, I will charge you for both."

Said Tommy, "I will be careful, and do the very best I can."

Mr. Meek then told Tommy and Jane to bring the empty hive into the wood-shed. He went there, measured its different parts, and sawed out one piece of each. These he directed Tommy to mark, and use as patterns; and Tommy found them a great help.

For some days Tommy and Jane worked carefully at the hive, and at length the first one was finished, and their father was asked to examine it. He said it would do, but showed Tommy where he had made some mistakes, and also where it might be improved. As Tommy always attended school, when in session, the seven hives were not all made and painted until May. One day, when the children were from home, Mr. and Mrs. Meek were in their storeroom looking at their hives, and Mr. Meek said to his wife, "If those children never sell a pound of honey, what they are learning by engaging in this work will more than pay all expenses."

As the lumber and nails were furnished by Mr. Meek, the seven hives cost only \$1.50, for oil and paint.

The four colonies were wintered in the cellar, and placed in the yard the following spring.

The one in which was the new queen was found badly diseased. It had dysentery, and the hive was in a filthy condition. After the bees had a flight, the combs were removed by Mr. Meek to another hive, and then warmly covered with cloths. It finally rallied, and, by exchanging an empty comb for one of scaled brood from one of the other hives, it became strong by the time white clover bloomed.

That winter there had been much snow covering the ground, and protecting the clover; and in the following summer there was a most bountiful bloom of white clover. The children, under their father's directions, had prepared cases of nice clean sections, ready to be placed on the hives. They had also prepared their frames for the lower story of the new hives by fastening strips of foundation two inches wide along the top-bars. They did this to encourage the bees to build straight combs. Long before the time came for placing the sections on the hives, they had all things ready; or, as Mr. Meek expressed it, their dish was "turned up to catch the honey."

When they saw the white clover beginning to blossom, sections for surplus were placed on the hives. When these became filled they were elevated, and others put under them; and in this way the bees were kept busy, and no sections were removed until every cell was sealed.

When swarms issued they were hived in nice new hives, with wide starters of foundation in every frame, and in a short time they had filled their hives with nice straight combs, and had begun work in the sections, a case of which had been placed on all first swarms a few days after hiving.

As abundant room for the storage of honey was always afforded, and as the hives not shaded by the trees and shrubbery were well protected from the sun by boards leaned up against them, there was not much of a disposition to swarm. It seemed that the honey so abounded in the white clover, and they were so busy gathering it, that they forgot all about swarming.

They had only five swarms, so when the season closed, the firm possessed nine colonies; but the pantry shelves were groaning under the load of nice comb honey that had been placed on them. There was not much basswood in reach of their apiary, therefore this honey was mostly from white clover.

After the clover-yield, all the hives, by Mr. Meek's directions, were reduced to one case of sections, to await the yield from fall flowers; but for some reason there was no honey gathered from that

source. When these cases were removed they were found empty. Although many sections were partly filled with light honey, when the flow from that ceased, all were found to be empty, the honey having been carried below; but an examination showed that the hives were heavy, and that doubtless all had abundant stores for winter. They found honey in the fall flowers, but not enough to send them into the sections.

The crop of honey was 447 pounds, every section nicely filled and sealed, and as white as snow. After selecting 72 pounds of the nicest sections for home use, the rest was sold to a grocer in the town at 15 cents a pound. When the firm delivered this honey, and received \$56.25, they felt rich indeed. That night they posted up their books for the year. They found that their entire outlay had been only \$6.75, which, added to the \$20.10 owed their father for last year, made \$26.85 as their entire debt. This they paid and had \$29.40 remaining. They were now out of debt, and could feel that their apiary was all their own, and the question was, what to do with the rest of their money. Their mother advised them to place it in their father's keeping, and use it as needed to provide supplies for their apiary. Their father said that as they had three empty hives, he thought ten new ones would be abundantly sufficient to hold next year's swarms; that he had no lumber on hand, and that, if Tommy made hives, he would have to buy lumber, and that it would be better to order hives in the flat from the supply-dealer. These would be planed, and cut out all ready to nail, and would cost only a little more than the lumber. Ten hives would cost 85 cents each; so the money was sent for them. They also ordered 1000 sections.

Mr. Meek wanted Tommy to study diligently; and he well knew if ten hives had to be made by him it would interfere with his studies; therefore he advised buying hives ready to nail. To nail and paint these was a comparatively short job, and it was all done before school opened.

One evening, late in the fall, Mr. Meek returned from a short journey he had taken in his buggy. The children ran out to greet him, when he lifted a large tin can from his buggy, and asked if they knew what it was. After they had examined it Tommy guessed it was a churn; and Jane said it was a machine for making apple-butter.

At length he told them it was a honey-extractor. They had read about that machine, and its use, but had never before seen one. This excited them, and they were for running with the news to mother, when their father called them back to care for the horse, as he was chilled after his long ride. When they returned from the barn they carried the extractor with them into the house. Their father, now warm and comfortable, explained that, where he had stopped the previous night, the farmer had at one time owned quite an apiary; but an invalid son who cared for the bees had died; and as there was no one to take his place, the bees had been neglected, and finally all had died. He was selling his hives and fixtures, and had offered this extractor and uncapping-knife for three dollars. As it was not half its cost, he bought it for the firm. He then showed the children how to take a frame of sealed honey, cut off the caps with the honey-knife, and place it in the revolving frame, close by the wire netting; prepare another frame of honey, and place it on the opposite side; then turn the crank

rapidly, and the honey would be thrown out, and, striking the side of the can, would run down, and could be drawn off through the honey-gate. The combs would then need to be lifted out and turned, when the other side could be extracted in a similar manner. The combs, then free from honey, could be returned to the hive, and, in the time of a good honey-flow, would soon be refilled.

He said he felt confident that more honey could be raised by extracting, but it did not meet as ready sale in most communities as the comb, and sold at a lower price. To raise extracted honey, we need to prepare our hives with two sets of frames—one below for brood, and one above for surplus. A hive so prepared is called a two-story hive. The frames in the upper story are the ones extracted.

During the winter, Tommy, under his father's direction, made upper stories for two of their hives, intending to use those two for raising extracted honey.

To be continued.

SOME EXPERIMENTS WITH CANDIED HONEY.

IS THERE ANY WAY TO PREVENT ITS GRANULATION?

ONE man writes you that, if honey is kept in a warm room, it will not candy; another says, Seal it up hot; another, Keep it in the dark. Writers seem to ignore the fact that a test made with only one kind of honey is of no value whatever.

I noticed some months ago you spoke of honey not candying, even with a zero freeze. Are you sure that a zero freeze will cause honey to granulate more quickly than the most moderate weather we have in January? I am not sure that you are not right. My experiment which I am about to give is not worth much, for the reason that it was made with only one kind of honey. You will remember the year we had a drive together, some ten years ago. The following winter I took some of your Medina Co. honey (linden, candied solid). When we got it I melted it thoroughly, put up 10 half-pint glasses, placed two in the office where there was a self-feeding hard-coal stove, perfectly warm—I should think certainly above 60° the 24 hours—two in the yard exposed to a zero freeze; two in the cellar, wrapped up in dark paper placed in a dark room; two in the hallway where it would be about the freezing-point all the time, and two in the ware-room, where it was warm in the daytime and cold at night. Now, inside of two weeks every glass was candied solid, and I could not distinguish any difference in the time that it took for each one to become candied.

That same season I went to the Shenandoah Valley, in Virginia, and bought some honey from the blue thistle, in the comb. The following May that honey was not candied. After I left there, which was in August, they had a good yield from a yellow flower, I think the goldenrod. Some of that was sent to us; and although that was taken out of the hive after what I have already spoken of, it was candied solid in the combs in the month of November.

When a man tells me how to keep a certain kind of honey from candying, then I am ready to listen to him; but when he tells me how to keep *honey*

from candying, then I know that he does not know what he is talking about. I don't believe there is a possibility of keeping your linden honey from candying, and dozens of other kinds are just as liable to candy. Now, my experience has simply taught me that, if I go and buy one kind of honey it will candy quickly; and if I buy another kind it will remain much longer in the liquid state; but as for preventing the granulation in the winter season, I am as ignorant as the day I was born. I have also learned that honey placed in a glass, with a small piece of candied honey put in it will granulate in the month of July, the candied portion working like leaven, until the whole glass is in the same condition.

Some one in GLEANINGS lately made the statement, that when honey granulated shows grains, it is an evidence of purity; and that when it is smooth it is an evidence of adulteration. Now, I think he is mistaken. I go to a commission house to buy California extracted. I open one can, and find it is grained nicely—that is all I want to see. I don't need to taste it—it will suit me. I open another can in the same lot in the original package, and I have no doubt of its purity. I find it is candied, but smooth; a little darker than lard, but otherwise exactly like it in the smoothness of its appearance. I don't want it; the flavor is not good; yet I have no doubt of the *purity* of the honey. You bee-keepers laugh at people's ignorance when they say they don't want candied honey; but that does not help the matter. You and I have not a sufficient lease of life to hope to see the day when the masses in our cities will be educated to buy honey in the candied state; and it is the masses in our manufacturing cities who must be depended on to use up the great yields of honey which seem to be increasing every year. What is the remedy then? I think it is the wisest course to recognize the existing prejudice against candied honey, and do the best you can to give them the honey in a shape that they will buy. It seems to me that it would be quite within the province of the bee-journal to experiment, and learn the kinds of honey that will remain the longest in a liquid condition; and the intelligent apiarist would then know that it would be to his advantage to market that which candies quickly in the comb, for we all know that honey, being slightly candied in the comb, will not interfere with its sale. It seems to me that, if no extracted honey were sold that was inferior in quality, or that would candy quickly, it would help the sale of honey wonderfully.

There is an evil in the business which I wish to speak of, and then I am done. It is the putting of two thick pieces of glass and a stout frame, all to hold one little piece of comb honey in its place. When I see a man give value for money, and at the same time prosper, I bid him Godspeed; but when a man owes his prosperity to his sharpness in being able to induce customers to buy two big pieces of glass, with the little piece of honey and all to be weighed as honey, I feel like asking him if he is running his apiary in full accord with the golden rule.

M. H. TWEED.

Allegheny, Pa., July 5, 1886.

Friend T., I have read your article carefully all the way through, to see if you touched on the plan laid down in the A B C book, of sealing up the honey while hot, to prevent candying. I have never had proof that this will not keep it perfectly limpid,

providing the honey is sealed up exactly as we seal up fruit. Of course, it must not be heated to the boiling-point, as this will injure the honey. You speak of putting the honey in half-pint glasses, but you don't say whether they were hermetically sealed, and sealed up while hot. I am very well aware that there is a great difference in honey of different kinds. Some will never candy, and I gave up trying to make them candy. Horsemint honey, I believe, has never candied with us; and the pure white-sage honey of California—at least some specimens of it—we have kept year after year, winter and summer, without candying.—Now, I want to protest a little against what you say in your concluding paragraph. Putting up honey in the way you mention, and asking the same prices for it that you do for honey without the glass, might not be exactly the thing; still, if the purchaser wanted it in that way, I do not see why it would not be all right. Friend Doolittle has for years put his honey in glassed sections, and he has a class of customers who will not touch it in any other shape. Whether he still puts it up in this way or not, we can not say. We have had quite a quantity of this kind of honey; and when we first put it on our wagon, a good many took right hold of it, because it could be seen and handled without any danger of daubing. We sell it, glass and all, however, for 12½ cts. per lb., while our nicest honey in light Simplicity sections brings 18 cts. per lb. When glassed comb honey brought from 25 to 30 cts., there was a chance to make money in selling it glass and all; but when it brings only 12 cts., I am not sure that the bee-keeper would come out very much ahead, after paying for his glass.

OUR BEES AND NEIGHBORS.

WHAT CAN WE DO TO PRESERVE PEACEFUL RELATIONS BETWEEN THE TWO?

FRIEND ROOT:—Please read the inclosed, and then consider the following: I should like it, or something better, printed in a neat, tasty form for *gratuitous distribution* among my neighbors. I should want only 300 or 400, but if you were to get up something to enlighten and mollify one's neighbors, I think you could sell them by the thousand, thus enabling you to print them cheaply. They might include some plain facts about bees, and a picture of the queen, worker, and drone. The people who are not bee-keepers are *very* ignorant, as a rule, about bees. Something about honey, and how to keep it, might be added. In short, if you think well of the plan, you can add or omit anything you wish. I only send this as a sample of *about* what I want.

Now that I think of it, an item specially directed to storekeepers or grocers would be in place. They often complain. They leave sugar and molasses open to flies and dirt; and when the bees come around there is trouble. Town authorities sometimes know so little that they prohibit the bees. If you take kindly toward this, and will get up a neat, showy tract, or even one page, and send out a sample with GLEANINGS, I think you will have plenty of orders. One can't go around and tell

everybody every thing. If it is printed in a local paper, it is forgotten. Besides, the local presses have not the experience nor facilities for getting out what we want. Please reply to this, telling me what you think of it, and what you will do, and what will be the probable cost per hundred of the "Tract of Useful Information to My Neighbors and Friends."

A. CAMERON.

Derry Sta., Pa., July 10, 1886.

Friend Cameron, your suggestion is a most excellent one. I, like yourself, have labored to explain these things, and to set people right in the matter; but they have such erroneous ideas that it is a very difficult task indeed to tell the story all over to each separate individual. The greatest difficulty will be in getting people to read these tracts or circulars. But I think it quite likely that those who have been annoyed by bees will be quite ready to look into the matter, and with interest. Our readers will find the subject-matter of the tract alluded to below:

TO MY FRIENDS AND NEIGHBORS.

This is about bees. Please read it carefully and preserve it. The bees sometimes come into your house and annoy you. Perhaps you get stung, or they fall into your jelly-kettle, or sting the baby. I am very sorry for it all, and send you this little article, hoping to save you trouble hereafter. The bees try to steal only when the flowers are scarce. The worst time is in autumn, just when you want to make fruit butters and jellies; and to be worried by bees when you are tired and warm is provoking. Now, this is the way we do at our house, and we never have any trouble, even with the bees right in the yard.

1. Never set any scraps of honey or other sweets about the windows, or anywhere about the house, for the bees to *clean up*. They have good memories, and will prow about for days, after having had a taste.

2. We never set jellies on the window to cool, unless we have a good wire screen at the windows. Most of the trouble is caused by exposing jelly in this way. The bees find it, and think it is theirs. A bee has no conscience, and will steal without remorse.

3. If a bee comes into your house, drive it out or kill it. Never let it get a load to carry home.

4. If they have gotten into your kitchen and into your jelly, you will have to be extraordinarily cautious for a week or more. Smoke is the best thing to drive them out. But they won't stay out, and you will simply have to shut up the house. But this will never be the case if you will observe the simple precautions above noted.

Permit me to say a word in defense of the bees. They are not an unmitigated nuisance.

1. By having a bee-keeper in your community you are furnished with a pure and wholesome food cheap.

2. Bees are useful, apart from the honey, in fertilizing the flowers of your fruit-trees and garden-vines. Without bees there would be no fruits, and your melon, squash, and cucumber vines would not bear. If you want me to explain this, I shall be happy to do so.

3. It is charged that the bees spoil grapes, pears, etc. They do suck the juice out of all broken fruit; but this would sour anyhow. They can't open the

skin of a grape. The birds do the real mischief. I can prove this to your satisfaction, if you will bring a bunch of sound grapes, or any sound fruit, to my bee-yard.

4. People who live in towns must bear and forbear. The pigpen and privy are often nuisances across several lots. They should not be; but you draw a full breath some warm evening—whew! Besides, are you sure that our chickens are not often a mutual trouble, to say nothing of cats, dogs, and such like? And yet we manage, by forbearance, to get along neighborly, as is right.

I am sure that you will not do so wicked and useless a thing as to set out poison for the bees. If you have suffered any material injury, I will try to give you satisfaction. By setting poison for the bees, you not only do a damage to the bee-keeper out of all proportion to the harm his bees have done you, but you may cause the death of some person.

Any further advice or help in any matter relating to the bees, the undersigned will cheerfully furnish.

Derry Sta., Pa.

A. CAMERON.

I want to add emphasis to your No. 3. If a bee comes into your house, and begins to sip up something sweet, the very kindest thing you can do to the bee and its owner is to kill it. If he slips away and gets back to the hive with even a small drop of something good, it is like a lighted match to a pile of shavings. It spreads, and very soon there is an uproar. Killing the bee is like blowing out the match before it has lighted any thing else. Some people think it is cruel and hard. A good many things are cruel and hard in this world, if we take a narrow view of them; but when one single insect, by his death, can save the lives of thousands, there should be no hesitation, and no weak, foolish sentimentalism. Kill him for the general good. The great troubles at the candy-stands and lemonade-stands on our fair-grounds can all be averted if the keepers of the stands will keep a paddle and kill every bee as soon as he comes around. I have seen this tried repeatedly.—In regard to the circulars, I think we will try our hand at getting them up. We will start them at 25 cts. per 100. If wanted by mail, 5 cts. extra for postage. I wish that others who are in the printing business may try it also. Let us see who can get up the most attractive tract for the smallest amount of money. A sample of ours mailed free to any one.

WHAT HAS BECOME OF FRIEND McGEE'S BEES?

DOUBLING FOR SWARMS TO PREVENT INCREASE,
ETC.

FRIEND ROOT:—I send you herewith some basswood-leaves. You will notice that they are covered with lice, some with and some without wings. You will also notice that the leaves are covered on the upper side with a sticky substance, which was discovered first about the middle of June. The basswoods are covered with it, some more than others. I also find it on the hickory-trees. This is the first of this kind of stuff I have ever seen, and suppose it is the much-talked-of honey-dew.

The question with me now is, What has destroyed my bees? Is it this substance found on the

leaves, or is it something else? On the 20th of May I had 24 strong colonies; from that date to the 15th of June all cast heavy swarms, and were hived as follows: 2d swarm where 1st had issued from; 3d where 2d had issued from, and so on, so that, by the 15th of June, I had gained but one colony. Of course, no after-swarming was allowed. You can imagine the strength of the colonies on the 15th of June. They were powerful. Up to that date they had done great work on fruit-bloom and white clover. Basswood opened about July 4th, and some trees are still in bloom; there is also an abundance of sweet clover, white clover, motherwort, and catnip, all of which the bees are working on. During the past week I expected a great deal of swarming and an immense crop of honey; but as something seemed to be wrong I went through all the colonies and found very few bees in the upper stories, and the brood-combs only nicely covered. They all looked as though they had cast a swarm the day before. The queens are the best, most of them hatched in 1885 and '86; their combs are filled with healthy brood, no dead bees in the hives, or on the ground in the apiary. Every thing seems to be all right except the absence of the field-bees. The new honey is of good color and quality; the capping is a shade darker than usual. Part of the colonies are working for comb and part for extracted; all are affected alike. What the outcome will be I can not predict, but I will report later. I can not believe that anybody is poisoning them, as I don't know that I have an enemy in the world.

I have sent Prof. Cook some of the basswood-leaves.

GEO. H. MCGEE.

Point Marblehead, Ottawa Co., O., July 13, 1886.

Friend M., I hardly think the honey-dew on the basswood-leaves has any thing to do with the missing bees. It may be hard to tell what has become of them; but is it not possible they worked themselves out, wore out their wings, and perished? There is so much water around you that a ragged-winged bee would be more apt to perish sooner than he would be in a different locality.—Is this the first season you have tried to return swarms in this way, or have you practiced it before? The effect is, you have a great quantity of bees in each hive pretty nearly all of an age; and when they have lived their allotted number of days during the working season, they are gone almost at once. One fall I brought in a great quantity of bees from a neighbor, to save them from being brimstoned. I divided them around in my hives, so as to make them tremendously strong, and fed them to get them ready for winter. They used a great amount of sugar; but when the winter came, my hives that had been overrunning with bees looked about as you describe yours. The bees I brought home were late swarms; and as they had nothing to gather they were of no use, there being plenty in the hive already to take care of all the brood the queen could produce; so when they died of old age I had received almost no benefit from them whatever. In your case I should have supposed the swarms would have given you an immense crop of honey before they wore themselves out; but you don't say a word about the amount of honey you received.—The sticky substance on the basswood leaves

seems to be the ordinary secretion of the aphides, only it does not seem to be very sweet. Prof. Cook replies to friend McGee in the next article.

PLANT NECTAR.

Some Additional Thoughts from Prof. Cook.

IS IT PROBABLE THAT IT MAY KILL BEES IN WARM WEATHER?

THE leaves sent by Mr. McGee are thickly gummed with a nectar of very doubtful character, if I may judge from the taste. It is as thick as syrup in cold weather; is very abundant, and quite nauseating to the taste. Upon the leaves I find abundant cast skins of spiders, though no living lice. There can be no doubt but that the nectar is an excretion from the lice. Lice have been very common this year, doubtless owing to the severe and long-continued drought, and have been pretty well studied here by myself and students.

Upon close examination we find that these plant-lice not only emit drops of nectar from the nectaries, the long tubes on their backs, but also that they pass a somewhat similar nectar from the alimentary canal through the anus. The nectar from both sources is seen to be quickly appropriated, and seemingly relished by the many ants that are lured by it to the same plants that are sacrificing their sap and life to these myriad lice.

Until last year I had thought that nectar from aphides (plant-lice) was always wholesome, and of good flavor, while that from scale, or bark lice, we all knew to be bitter, and even nauseating. Last season the blackberry bushes of Northern Michigan were crowded with plant-lice that furnished much nectar in the late autumn, which was eagerly gathered and stored by the bees. This nectar, though not so unpleasant as that from bark-lice, was not fit to eat. Some that I received early was not very bad, doubtless owing to the liberal admixture of honey from flowers. I thought this not very bad, and said I should not fear to use it for winter food for my bees. Later I got some probably nearly or quite pure that was decidedly unwholesome, and I said it was unfit either for table or bees. It is thought that many bees died from the use of this food last winter.

The nectar on the leaves sent by Mr. McGee reminds me much of that from the blackberry shrubs, and I should hesitate to use it for winter food for the bees. That it is killing off the bees at this time, when they are on the wing every day, and can freely void their feces, I much doubt. I should hardly accept it as a cause until I had proved by thorough investigation that no other cause was present, and, by experiment, by feeding a few bees in a cage, on this nectar, that it was toxic, or a poison to the bees.

I have seen—yea, and tasted—of honey derived from plant-lice, notably from larch-tree lice, and from lice from evergreens, that was excellent in color and flavor. May it not be possible that the nectar from the nectaries and skin of lice is wholesome, while that from the anus is bitter and noxious, and that the presence or absence of this latter makes the difference? I think the best test in the matter is our own taste. *Never give the bees*

honey for winter that we would not use on our own tables.

A. J. COOK.

Agricultural College, Mich., July 16, 1886.

BEE-KEEPING IN CUBA.

A DESCRIPTION OF ONE OF THE LARGEST APIARIES IN THE WORLD.

THE honey-bee was introduced into Cuba from Spain at a very early period of its history; and being a land of perpetual flowers, with no winter to impede their labor, they soon spread to all parts of the island, and bee-keeping has long since become one of the established industries. There is probably no other country of equal extent on the globe, which has furnished an equal amount of honey and beeswax. The latter has, for more than two centuries, illuminated the churches of both this island and the mother country, besides furnishing the supply needed for other purposes, while the former has found a remunerative market in all civilized countries, chiefly in Germany, England, France, and the United States.

A Cuban bee-hive is very simple, consisting merely of a hollow palm log, or oblong wooden box, 10 to 15 inches in diameter, and 5 to 6 feet in length, open at both ends. These hives are arranged in a horizontal position, three or four feet high, supported on a framework of long bamboo poles resting on posts driven into the ground. When these hives are full of honey, the Cuban bee-keeper, after thoroughly smoking the bees, thrusts, into one end of the hive, a long sword-shaped knife and cuts the combs loose from the inside walls. He then inserts a long iron rod, flattened at the end, and bent in the form of a right angle, clear into the brood-nest (which generally occupies about 15 inches in length of the center of the hive), cuts the combs, and pulls them out one by one. He then performs the same operation on the other end of the hive, and so continues until the whole apiary is gone over. The combs are now submitted to pressure, and the wax separated from the honey. Of course, the honey so obtained is not very pure, being mixed with pollen, propolis, dead bees, and the juices of larvæ, all of which tends to cause fermentation; Cuban honey (than which, when pure, there is no finer in the world) has gained an unenviable reputation. Native apiaries, of from 50 to 300 or 400 hives, are frequent, and sometimes as many as 2000 are kept in a single yard. The season for surplus honey extends from October to April, the height of the flow being from the middle of December to the middle of February; but there is almost always a sufficiency for breeding purposes, and hence the Cuban bee-keeper never resorts to feeding. He "robs" his hives only once or twice during the year, and seems satisfied with an average production of 75 to 100 lbs. of honey, and 4 or 5 lbs. of beeswax per hive.

Nearly three years ago the writer introduced, for the Messrs. J. N. & P. Casanova, 100 stocks of Italians in movable-frame hives, together with all the modern appliances necessary to insure success. They were located about 18 miles S. E. of Havana, 8 miles from the ocean, and, we believe, constitutes the first apiary on modern principles ever seen in the island of Cuba; and to the gentlemen referred to belongs the credit of this great change in the systems of bee-keeping, from which promising re-

sults will undoubtedly be realized by many of their brethren in the near future.

MODERN BEE-KEEPING VERSUS THE OLD WAY.

The year following the introduction of these bees, 113 of them gave, in a period of 4 months, 43,000 lbs. of choice honey, being over 380 lbs. per hive, or more than four times the amount produced on the old plan. The success of this experiment far exceeded the most sanguine expectations of the Casanova brothers, and, being gentlemen of means, they at once set about and completed one of the best-appointed modern apiaries to be found in any country; and for the benefit of the readers of GLEANINGS, we will briefly describe it.

The apiary and buildings cover nearly three acres of ground, in the form of a rectangle, sloping to the southeast with a descent of 10 feet in a hundred. Near the center of this plot are two sheds, each 200 feet long, extending across the plot in parallel lines, east to west, and about 30 feet apart. Opening out from the northernmost of these sheds are 6 others, extending to the north line of the plot in parallel lines 25 feet apart. At the center of the south one of the two first mentioned is another shed extending to the south 60 feet to the extracting-room. These sheds are all 9 ft. wide, 6 ft. high at the eaves, peaked palm-leaf roof about a foot thick. They are high and airy, affording perfect protection from sun and rain, and are always comfortable, even in the hottest weather. Along both sides of the sheds, just inside of the eave-lines, are the long rows of two-story hives, painted white, 5 feet apart, and, of course, facing outward, so that the flight of the bees in no way interferes with the workmen. The ground, all sloping toward the honey-house, makes the wheeling-in of the loads of well-filled combs comparatively easy. The extractor is a 6-frame reversible, made by Aspinwall & Treadwell, of heavy galvanized iron, and delivers the honey through a large pipe on top of the center of a broad screen, covering the top of an evaporating-tank holding 8300 lbs., where the honey is freed from any little pieces of comb, etc., which may have got in by accident. From the concave bottom of this tank an iron pipe extends down the sloping ground 60 ft. further, to a broad covered shed where the honey is received directly into the bungholes of the tierces by merely turning the large faucet on the end of the pipe. Along the lower side of this barreling shed, and coming close up to it, is the roadway, which is enough lower than the floor of the shed to admit of the rolling of the filled tierces into the carts ready for transportation to the depot.

It will thus be seen that, from first to last, there is no dipping or lifting of honey required. We might go on to describe the uncapping arrangement, with their screen bottoms and troughs leading to the evaporating-tank, and many other useful appliances of the large airy extracting-room; but our "story" is already drawn out beyond the space we supposed necessary to tell it; so we will close by saying that every thing is built substantial, ample, and yet simple, and contrasts strongly with some of the little "cluttered up" arrangements too often seen in our own country.

A. J. KING.

N. Y. City, N. Y., July, 1886.

Thanks, friend King, for your very valuable communication, especially your description of the Casanova apiary. Now, if it is a possible thing we want a photograph of this apiary, to show the arrangement of the

hives, sheds, etc. If it can be accomplished, never mind the expense, but let us have a glimpse of this great Cuban apiary. I read your communication all through with a very strong curiosity to know where so much honey is disposed of; and now if it is second to none in the world, can't we have a sample barrel of it? In our price list we advertise clover and linden honey, and also California honey; why not let us say Cuban honey also?

THE PRODUCTION OF WAX.

How Many Pounds of Honey Does it Cost the Bee-Keeper for Every Pound of Wax Made by the Bees?

SOME VALUABLE SUGGESTIONS IN REGARD TO THE MATTER, FROM FRIEND HASTY.

FRIEND ERNEST:—Concerning yours of the 25th ult., about my experiments to find how many pounds of honey make a pound of wax, there certainly were such published in GLEANINGS, but you fail to find them; and with a hurried search I fail to find them also. Since writing that article I have made more careful experiments, which I intended to write up and lay before our bee-keeping friends, but have never found time to do so.

I regard the doctrine, that a pound of wax equals 20 pounds of honey, as a monstrous and mischievous error, with no foundation to stand on but the carelessness of observers and the sullenness of bees when subjected to unnatural conditions. In planning matters in my own apiary I consider a pound of wax as the equivalent of about three pounds of honey. I also heartily agree with the idea, first advanced, I think, by Mr. Doolittle, that much of the comb actually built in an apiary is built at no cost at all in honey. Just as the blood of an animal supplies material for the growth of what hair he needs, and little or nothing would be gained by obviating it, so the blood of the bee probably supports the growth of a moderate number of wax-scales without causing any special demand for food.

It just occurs to me to venture the remark, that it is the white wax that costs, and the yellow that we get free. When the bee eats honey and makes a business of digesting it into wax, the scales are white; but when he furnishes a few scales, while consuming pollen freely, the scales are yellow.

E. E. HASTY.

Richards, Lucas Co., Ohio, July 14, 1886.

Friend H., considering the suggestions at the close of the above, that perhaps a moderate number of wax scales do not cost the bee-keeper any honey at all, may be you are right in suggesting that a pound of wax does not cost more than three pounds of honey; then it would follow from this, that, if liquid honey is worth only 7 cts. per lb., a bee-keeper could produce beeswax, at least in moderate quantities, for 21 cts. per lb. Now, then, where is the bee-keeper who has ever done this, or who can do it, or will do it? We will pay liberally for reports of experiments in this line. And, friend Hasty, I wish you would take time and write up the article you allude to as above. It is indeed a matter of great moment, not only in our

country, but especially in tropical lands, far away from civilization, where honey is worth next to nothing.

THOSE BOXES FOR FORMING NUCLEI.

FRIEND DOOLITTLE EXPLAINS.

SEEING Ernest's article on page 550, regarding how he formed a colony by using one of the boxes I have described for forming nuclei, leads me to give the readers of GLEANINGS some of the uses I have put these boxes to, and to explain some points which I see Ernest and perhaps some others fail to understand. I see Ernest thought it necessary to get his bees from several different colonies, while I get them from but one, only in case of uniting nuclei in the fall or in making very large colonics. The getting of the bees from only one colony does away with much of the labor, for only one queen has to be hunted, and only one hive opened.

Well, since I wrote regarding the plan before, I have found out another "kink" which makes this the simplest plan of forming nuclei known, and involving as little labor. Well, the "kink" is this: I get the bees from the upper story of a two-story hive, having perforated zinc between the hives. Here I know there can be no queens; and to tell the reader how easy it is done, I will go over the ground a little the second time.

Between the hours of 10 and 11 o'clock A. M. I take my box and funnel, and go to one of these two-story hives, open it, take out as many frames as I want bees (which is generally not more than two), and jar them a little so as to cause the bees to fill themselves with honey, waiting a moment or two for them to do so, unless I am to make more than one. If more than one is to be made I pass on to another hive and get out two frames from that, when I go back and shake the bees down through the funnel into the box, and close the hive. In times when honey is coming in plentifully from the field it is not necessary to wait for the bees to fill themselves, for they are already pretty full of honey. The box is now taken into the shop, and a cloth thrown over it. Any room or shady place I find just as good as a dark cellar, which I at first recommended; and I often set an empty hive or hive-cover over it and leave it right in the apiary so as to save all extra travel.

In less than one hour these bees will almost "cry" for a queen of some kind; but as they will sometimes cluster one if given too soon, especially where virgin queens are used, I wait till about two o'clock, when they will fairly beg. I now get as many virgin queens, from four to eight days old, as I have boxes of bees, and put in with the bees. I do not "jumble" them up at all, as I used to, for I find it is unnecessary. All I do in putting the queen in is to set the box down suddenly, so the bees all go to the bottom, and do this only to get the bees out of the way, while I put in the queen. The box is now left till near sunset, when the bees are all clustered in the shape of a swarm. They are now hived in a hive containing a frame of brood and one of honey. To hive them I have the frames of brood and honey set on one side of the hive, together with a division-board, when, with a quick jar, I dislodge all the bees from the box on to the bottom of the hive near the opposite side. I now quickly slide the

combs and division-board across the rabbits to this side of the hive when the bees are immediately on them. In three or four days more this young queen is fertilized and laying, and we have a nucleus ready for sending off queens at once with less time and labor involved than would take to get a laying queen in any other way. In fact, I think so much of the plan that \$100 would not tempt me to drop it and go back to any of the old plans—not for a single year. Then there is one other thing I especially value it for, which is, the safe introduction of a valuable queen arriving from a long journey. There is no longer any need of fears of safely introducing the most valuable queen, for I know that not one queen in a thousand will be lost if the above directions are followed. In this case I take bees enough to make a fair colony, and use more frames of brood, so that a strong artificial colony is formed at once. It is handy and good to know that you are ready to introduce a queen safely within three hours after she arrives, no matter if you do not know when she is to come.

Well, I was going to tell you more; but this article is already long enough. I don't like long articles, so I try to do as I would be done by. Give us short articles, but to the point, for interesting reading, friend Root.

G. M. DOOLITTLE.

Borodino, N. Y., July, 1886.

I was aware at the time. and so stated, I believe, that I was not practicing artificial swarming exactly as prescribed by you; but my intention was to put it severely to the test by taking bees from *six* different colonies instead of from one or two. In other words, I was ambitious to make your plan do *more* than you claimed for it, and so met with the partial failure as recorded in the apary report of last issue. Perhaps you do not claim that the plan will make *all* the old ragged-winged bees stay in their new location; at any rate, I succeeded in making a few of these old fellows stay, when I failed entirely by the ordinary plan. I see you do not recommend putting the queen among the bees immediately, but wait till they fairly "beg" for a queen—good, bad, or indifferent. I suppose you tell when the bees get into this "home-sick" or "queen-sick" state, by the hum of distress which will be noted in queenless colonies. Then you drop in the queen.—We will all join hands with you in calling for short articles. When a great number speak briefly, and to the point, it always adds life and variety to a journal as well as to prayer-meetings.

COMB OR EXTRACTED HONEY.

RETURNING SWARMS.

ON page 537, July 1 GLEANINGS, Mr. M. H. Tweed makes a suggestion in regard to disposing of comb honey that would not sell if extracted. The suggestion he makes is all well enough, if the sale of honey alone is the object we desire to attain; but will it pay in the long run to offer for sale, in the comb, honey that would not sell if extracted? In view of the fact that the purity of honey (comb honey too) is already questioned, would it not be better for us to endeavor to show the public that our honey is of undoubted purity, rather than to attempt to dispose of the cheaper

grades by securing it in combs? As yet the public are not educated up to the point of knowing that dark honey is equally pure as the lighter grades; and the suspicions that are already aroused will be found difficult to allay, even if we offer nothing for sale as such, except the very best we can raise. Let us all, then, strive to offer nothing but the best as such, rather than to dispose of the poorer, by what the uninitiated might call questionable ways.

On page 533, same issue, Mr. C. H. Wood suggests a good plan for returning swarms "when but little increase in the number of colonies is desired." I presume this suggestion and description is intended to cover those accidental cases that will at times occur, no matter what care is taken to prevent; but as there is a question as to whether simply it is so meant, or that his plan should be a general rule, I would suggest that all the trouble, bother, and care attendant upon so returning swarms, and watching to know the hive they issued from, can be avoided by using a queen and drone trap. In case it is not known from which hive a colony issued, dust a few of the bees with flour, then carry them a short distance from the spot they alighted upon, and throw them in the air; they will at once return to the parent colony, and their white jackets can not be mistaken, when, without such precaution, it might be impossible to the parent hive.

Foxboro, Mass., July, 1886.

J. E. POND, JR.

Friend P., I am sure that our good friend Mr. Tweed had no thought of palming off poor or inferior honey, but, rather, something like this: We all have two or more qualities of honey, and the color is not always an indication of the quality for table use. Now, dark honey does not sell well in the liquid state, even though the flavor be first class; hence, may not this same honey of excellent quality but of poor color be more profitable if put into the combs, and sold as comb honey?

FOUL BROOD NOT CURED BY SALICYLIC ACID.

EXTERMINATED BY MELTING COMBS AND BOILING FRAMES AND HIVES.

I BEGAN bee-keeping about four years ago. I succeeded very well until I had about 12 colonies, when I lost all but two with foul brood. I think there could be no mistake about its being foul brood, as the caps of the brood-cells sunk in, becoming concave, with a little pin-hole in the center, and little or none of the brood hatching out. The cells when opened contained a brown semi-liquid substance, about the color of roasted coffee, and had a very offensive smell. I tried spraying the comb with salicylic acid and borax, as directed on page 93 of the A B C; but the only effect it seemed to have was to kill the mature bees. In an hour or so after spraying you could see hundreds of them hopping about on the grass in front of the hives. I thought at first perhaps the drugs were impure, and bought at another place, but with the same result. I was then making preparations to move from Clay Center to this place, which is 15 miles, at least, from any other bee-keeper, so I made two new hives, put what remaining bees I had into them, and sent them here. I melted all my combs into wax, and exchanged for founda-

tion. I boiled all my frames, hives, bottom-boards, and covers, and am using them now.

From the two hives, in two years I have increased to ten. We get little surplus honey in this neighborhood until the latter part of August; very little, if any, white clover is grown here. I got about 200 lbs. of extracted honey per hive last fall, mostly from goldenrod, I think. Bees have to be fed in May. I tried a rather odd experiment in feeding this spring, which I will give you for what it is worth. As farmers will, sometimes, I got very short of sugar, and did not have time to go to town after more; but the bees must be fed. So I reasoned, that, as new milk is good for man and beast, why not for bees? I fed the colonies that were in the greatest need about a teacupful each, daily, for nearly a week, of new milk, made quite sweet with about a tablespoonful of sugar. The bees drank it eagerly, and cleaned the platter before it had time to sour. But although I looked the frames over several times, I could see nothing like milk in the cells. What did they do with it?

M. H. PANTON.

Oak Hill, Clay Co., Kan., June 26, 1886.

Friend P., your suggestion about feeding the bees milk is a valuable one; and since you mention it, I recall that this same subject was talked of a good many years ago, and it was then thought that milk assisted very materially in brood-rearing, at times when little or no pollen was to be had. I think it quite likely, that where bees are in a starving condition, or pretty near it, during a dearth of honey in the summer months, milk might often in many homes be the cheapest food that could be given them until honey came again; and I am inclined to think they can be easily taught to take new milk, right from the cows, without any sweetening at all. Have any of our readers ever tried it?

HAVING STUDENTS IN APICULTURE.

MRS. CHADDOCK'S EXPERIENCE WITH 'EM.

THIS summer I am having a student to learn bee-keeping. I never advertised for students, and I do not want them. I have no time for it. So when this young woman came to me to learn bee-keeping I tried to put her off, but she persisted. I gave her a copy of GLEANINGS, the A. B. J., and C. B. J. to read, and went to sleep. When I awoke, three hours later, she said, "I can't make head nor tail of this stuff. It's all Heddon and Doolittle, reversible hives, queens, broodings, and lawsuits."

"Oh! well," said I, "keep on; and when you have read these papers for fifteen years you will begin to see the point."

"But," said she, "I want to know how to do to get lots of honey; I want to make money."

"And," said I, "that is just what Heddon and Doolittle are all the time writing about."

"Well," said she, "I think I had better begin somewhere. This looks as if we were taking the fish in the middle and swallowing both ends at once. Isn't there any beginning to bee-keeping?"

"Yes," I answered, "there's plenty of beginning; there's Root's A B C," and I turned over and went to sleep again. Next morning she followed me out among the bees; and after looking round awhile

she asked which were the Simplicity hives. I told her and she put it down in a note-book. I told her that note-books were no good; but that if she wanted to help she had better get on a bee-hat, and help me carry away a few old colonies that needed moving. She came back presently, hatted and gloved, and with sleeves tied down. We picked up a Simplicity hive, bottom-board and all, and started; but just then a bee stung her on the ankle; she screamed, and said she must set the hive down; she would let it fall, she knew she would; but I said, "If you let it fall I'll —," and she held on till we had it in the right place. Her ankle and foot swelled up tight, so that she could not walk any for three days. I told her she could quit the student business at any time, but that, if she pretended to help, she must help, and not weaken when the tug of war came.

I am selling comb honey at 10 cts. a pound, where a man takes a whole box, or 12½ for a few pounds. Good honey is selling in the same market for seven cents. It is just as good honey as mine, but it is in the old-fashioned honey-boxes, each one weighing from 15 to 20 lbs. I have three towns to sell in, besides the country folks. If I take honey anywhere, and the man who is selling it has half a box on hand, I do not leave it but haul it home again; and when he is just out I take it back again. The best plan is not to take it till they ask for more. People will buy honey when it is nearly gone, who won't buy out of a full box. If there seems to be plenty, they say, "Oh, yes! I'll get some one of these days;" but if it is nearly gone, they are afraid that it will be all gone soon, so they buy it then. I think people often kill their own market by piling too much honey on it at once.

MAHALA B. CHADDOCK.

Vermont, Ill., July, 1886.

Why, Mrs. C., how in the world did you get to go into the "student" business? It is not long since you were going to hire out to drive a mule team. I suppose the young lady is still studying—at least, you don't say she went home and gave it up. Why didn't you start a wagon, such as we pictured last month? You could have the mule team to draw it around; and when you get a whole class of students, you could have them do all the work while you simply superintend. If you sell the honey at such low prices, however, of course your students would have to work for nothing, and board themselves; or, still worse, pay you something for teaching them so patiently.

HONEY-DEW.

HOW TO GET IT OUT OF HONEY-BOXES.

WE have had an excellent season for bees to build up on. White clover was more abundant than at any previous season—so much so we procured a little surplus from it; but before I was aware, my bees were storing honey-dew in the sections that had been nearly filled from white clover. Of course, I wanted that out, and tried an experiment which proved successful in my case, but would probably be too laborious for one who has a large apiary, and wants no more increase, and who has a large amount of this honey stored in sections.

I first extracted all the honey from a set of frames containing unsealed brood, and placed them in an

empty hive. I then took a strong colony of bees, and, after scouring the queen, shook all the bees (except a few) in the hive I had prepared, and released the queen in the old hive. I then removed the new hive some distance and let it remain over night. The next day the workers nearly all returned to the parent hive, leaving a fair colony of bees with but few workers and a hive full of brood, with nothing to feed it. Now is the time to give them a queen and put on the boxes containing the honey-dew. The young bees carried it down, as I expected they would, to feed the brood and store it in the combs below. The object of leaving the queen with the parent colony is, that worker-bees will have less inducement to remain with the new colony. Of course, they will empty the boxes, and we lose what white-clover honey had been deposited in them.

The honey-dew honey is not so dark, nor does it have such a strong, sharp, unpleasant taste as in the year 1884, when it was so remarkably abundant. It will be remembered, that the winter following there was great mortality among bees, which some accounted for by feeding this dark honey for winter stores. Whether it is a secretion from a different insect from that of 1884, I am not able to say; but I incline to the opinion it is the same insect, and that bees worked on white clover at the same time they were gathering it, which causes a mixture of the two varieties, and accounts for its not being so dark as it was in that year. If this was the cause of the great mortality of the winter of 1884-'85, bee-keepers may expect the same result the coming winter, unless some precautions are taken in excluding it from winter stores. But as I then wintered one colony successfully on that secretion alone, I feel like trying some more the coming winter.

Bees are now working on a species of smartweed which usually begins to bloom about the 2d or 3d of July, but which bloomed this season about ten days earlier.

GEO. WISEHEART.

Iola, Ills., July 12, 1886.

Friend W., your plan of getting honey-dew out of the sections is quite ingenious indeed. It seems too bad to lose the white honey also where a great portion of it is light. Would it not be possible, by keeping careful watch of the bees while they are bringing it in, to get them to take out the honey-dew before it is sealed up, without disturbing the capped honey?

FRIEND TERRY TALKS TO US ABOUT HOME INFLUENCES.

ALSO A HINT TO THE WOMEN-FOLKS IN REGARD TO SPRINKLING CLOTHES FOR IRONING-DAY.

FRRIEND ROOT:—I have been thinking for some days, while at work, about an idea thrown out by you in GLEANINGS for June 1, about little things shaping the future lives of our boys and girls. I am perfectly sure that they do. The simplest thing, done in a neat and tidy manner, before the children, will have its effect on their future lives, and it will be the same also if there is no attempt at order or neatness. A crooked stovepipe is an educator to the little ones as surely as the schoolteacher, or a door that won't shut, or a gate off the hinges, or a shiftless-looking

dooryard; all such matters will leave an impress on the children's minds that will make it seem natural for them to have similar surroundings when they grow up. We parents ought to think of this. When I was a small boy I thought, boylike, that father was over-particular about many things. I used to say to him, "Father, what is the use of spending so much time to get those potato-rows so straight (in the garden)?" Or, "What is the use of doing so much work in that dooryard?" You see, I was a boy then, and thought more of play; but father was looking ahead, and brought me up surrounded by such an atmosphere that I am necessarily as particular, if not more so, than he was; and many a time have I felt thankful for it.

When I see every thing at loose ends around a farmer's home, I can not help but think the chances are nearly all in favor of the children being just like him. If there is a nice lawn, and walks and flowers, and neatly painted buildings, and pretty trees, and every thing looks neat and tasty, I can tell almost to a certainty how things will look around the children's homes when they get some of their own, the surroundings of childhood have so much to do with the future grown person. A shiftless man whom I once knew, was being reprovved for his conduct by a friend, when he broke out in defense with: "You know my father and my Uncle James and my Uncle Henry, don't you?"

"Yes."

"Well, then, what more could you expect of me?"

To be honest, one had no business to expect any thing very much better of him. Now, I want to say to every reader of GLEANINGS, Think twice before you say "no" when the good wife wants you to fix things up a little—to mow the dooryard, to get her some flowers to make home beautiful. I know a man who is worth \$50,000 at least, who grumbled about it because his wife wanted him to get her a few flowers at 6 cents apiece. Ah! money is the only thing worth living for, in his eyes.

You may say that the love of the beautiful and of order and neatness are not so important as good moral training. Perhaps not; but the former will strengthen the latter. They are sorts of sugar-coated pills that will do good without being hard to take. At any rate, the children can not refer to your failings in future years, and say, "What more could you expect of me?"

Now, friend Root, I want to tell you about something that I found going on in my dooryard the other day. You may remember we got some wire clothes-line and a Whitman's fountain pump of you, among other things, last spring. Well, I found one of my daughters sprinkling the clothes, on the line, with the pump, after which they were rolled up and put in the basket ready for ironing. It was quite a saving in time over the old way; and with a little care it can be done very nicely. This is a use for the pump that I do not believe you ever thought of. To be sure, it is a little matter; but I am glad always to do what I can to make the work of the ladies, necessarily quite too monotonous, as pleasant and easy as possible. In my next letter I want to talk to the husbands and fathers a little about some improvements indoors.

T. B. TERRY.

Hudson, Ohio, July, 1886.

Thanks, friend Terry. Your idea is certainly novel, in regard to sprinkling clothes, and I am going to have my wife make a test of it at once. The cheap Smith pump, which

costs only a dollar, will no doubt answer just as well for this purpose as the Whitman, and it will throw the water in such a fine spray it seems to me it must answer the purpose excellently.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

CALIFORNIA NOT SO BAD AFTER ALL.

I THINK that Mr. F. J. Farr's article on California, page 489 of GLEANINGS, is a little overdrawn. I will admit, that there are many places in the southern part of the State where one could travel 22 miles, or even more, without coming to a house; but he should remember that this is a big State, and comparatively young.

The Harbison section, of which Mr. Farr speaks, is fast going out of use, and the one-pound section is used instead. There is no lumber in California that is nice for sections, so we are obliged to import them from the East, which makes them cost a little more than they do where made.

A good workman can always find plenty to do, and at good wages. I can always find employment at work in orchards at \$2.00 a day. W. W. BLISS.

Duarte, Cal., July, 1886.

DO BEES FROM THE SAME QUEEN CHANGE COLOR?

Whether the subjoined facts in regard to bees changing their color is any thing of interest to you, or whether it has been observed by others, I do not know, since I have not seen it in print. I have several hives of Italian bees which I raised artificially. They were, during last summer, of the right color—bright, not a hybrid or black one to be seen among them. Later, in the fall, one day on opening them I found several frames full of bees of a different color. I was somewhat disappointed. First, I thought a stray swarm must have found its way to the hives, or the queen might have died, or that the swarms raised a new queen, which met with an impure drone. I have had it all winter and spring on my mind, what caused the sudden appearance of (to my eyes) a different bee than what I had raised last summer, not only in one hive, but several. These very same hives don't show now any other bees than Italian, nor do the new swarms show any other strain. But this I found out, that the young bees not only look downy, but black; the three bars are hardly perceptible at first, but enlarge as they grow older, so that this summer, to the eye of a stranger, it looks as if I had hybrids, blacks, and Italians, all mixed up. Later in the summer, especially on some plants, bees as well as other insects will change color, even if only temporarily. I instance the aphides, or lice on fruit-trees, roses, etc.

Sandusky, O., June 21, 1886.

F. J. M. OTTO.

Friend O., I have often remarked that bees which I had in the spring and summer been calling my best and finest Italians, during a dearth of honey in the fall were almost invariably small and dark.

BLACKS VS. ITALIANS AND HYBRIDS; WHAT IS THE BEST BEE?

I have been asked this question so many times, and have asked the same question so many times with such diversified opinions, that I have long ago ceased to answer or ask. I am more in love with

the hybrid (Italians and blacks) than any others; my second choice is pure Italians; third choice, any thing but clear blacks. One-fourth of a mile from me is an apiary of 100 colonies. The owners would prefer clear blacks, designating my bees, which are mostly Italians and hybrids, as nothing better than "horse-flies." Now, if blacks are best I want to keep blacks; and if Italians are best, I want them; but really, from my experience I prefer hybrids. I have handled bees for the past 23 years, but upon improved principles for only the past five years, and I have never as yet had occasion to complain of the vindictiveness of the hybrids. As honey-gatherers they *Excel* (with a big E). While my blacks were idle during a recent drought, Italians and hybrids were continually storing a little honey.

I report a poor honey-yield in this section, on account of drought. I have 85 colonies—50 hybrids and Italians.

F. H. CHAPIN.

Hinsdale, N. Y., July 6, 1886.

BITTER HONEY.

I should like to have you tell me what the sample of honey sent is gathered from. Not being accustomed to it I can not tell. It is mixed in some four or five hundred sections. Some of it is so bitter we can not eat it. Will it improve by age?

WM. L. WARNER.

Charlemon, Franklin Co., Mass., July 14, 1886.

I can not give you any conjecture as to the source, for I have never tasted any thing like it before. So far as I am concerned, however, I should not object to it for my own eating, for to me the bitter taste is rather pleasant than otherwise. I might, however, get tired of it after having too much. I will explain to our readers that the peculiar taste is a little like cinnamon—say the thick barks cinnamon that is sometimes slightly bitter. Where honey is unsealed, and remaining in the hive, no doubt this taste would disappear to a great extent by letting it get thoroughly ripened. If it is in sections, however, that have been removed from the hive, I should not expect much improvement.

HONEY-DEW.

My peach-tree leaves yield honey every year. At the base of the leaf are three little tubes on each side. There is where they get the honey. There are persimmon-sprouts all over my place, and there is a kind of louse which wraps itself in the leaves—that is, folds them together. A great many are in each leaf. They produce honey three or four months. Shake a leaf in your hand, and out roll the little shot-like balls, from the size of a pin-point to the size of a duck-shot. I have just been out and got some leaves—a persimmon and a cottonwood. The bulged-out place on the cottonwood is where the honey was. I saw as much as a teaspoonful in one. This spring they lasted but two or three weeks. In 1880 I saw a pine-tree just covered with honey one morning; if you had shaken it you would have received a shower-bath of honey. It was dropping off on the grass, and even the ground was wet with honey. The bugs that produced it were about the size of a pea—oval-oblong, with a crease down the back. I could not make them show any sign of life. They were stationary—no legs, no mouth. They were attached to the limb with a heart-like contrivance.

Take the body of a tick, and you have something similar; break one, and you see a mass of matter. They were tucked in among the straw on the limbs—thousands of them. The tree was about 30 feet high; the branches, at the base, were spread about 12 or 15 feet in diameter, and tapered off gradually to the top. R. R. WILLIAMS.

Edwards, Hinds Co., Miss.

STARTING A HONEY-WAGON.

I come again to ask your advice upon a question which I wish you would give your *personal* attention for a moment; i. e., the advisability of starting a honey-wagon on the road. A great many farmers bring honey to market and take 10 or 12½ cts. per pound in unsightly sections; and when I offer my white clover and basswood honey (sections cleaned and honey white) for 15 or 16 cts. I am told they can buy honey cheaper. I thought, a wagon kept on the road in town and country could sell my own honey; and if parties are willing to sell *so cheap*, buy theirs and sell it out some way. I do not feel like devoting my entire time to the business, and have the market price controlled by a few bee-keepers who make no calculations on honey sales; and their willingness to take almost any thing, *must* cripple the sale of honey put up in better shape.

Nevada, O., July 20, 1886. WM. M. YOUNG.

Running a honey-wagon is quite an expense, it is true; but I think in many respects it will pay well, for the very reasons you mention. Always have at least two, or, still better, three grades of honey on your wagon. We get 18 cts. a pound for our very finest comb honey; but we have side by side of it cheaper grades for 12 and 15 cts.; but the cheaper grades remain almost unsold while we have the real "gilt edge" in stock. When that is gone (and, of course, it is always the first to be gone) then we have to fall back on the other. Your wagon might make the round, say twice a week, or even once a week; and I think it would pay you well to keep track of the honey-producers, and take their product off their hands at what it is worth. If they see you getting 18 cts. per lb. while they get only 10 and 12 cts., it will very soon have the effect of inducing them to take more pains.

HONEY-DEW, AND WHAT SHALL WE DO WITH IT WHEN IT IS GETTING IN THE SECTIONS?

I am an A B C pupil. My bees are putting honey-dew in the sections, which have been partly filled with clover, and are spoiling the whole lot. Shall I take the sections off and put them back when the fall honey-flow commences? Would they not be more apt to swarm if the sections were removed?

Conneaut, O., July 19, 1886. H. A. CUMMINS.

Friend C., it is a little hard to say what is best in such a case. Your sections are probably part full of white honey. The honey-dew will ruin the sale of it, unless somebody has a mind to take it at a low price and get out the honey-dew spots. They can see these by holding them up to the light as we have before explained. If you let them get filled up with fall honey, this will also injure the sale of them; but of course it will not be as bad as honey-dew. The bees would certainly be more liable to swarm if you take the sections off; but perhaps you might put on some empty combs, and

then throw out the honey-dew with the extractor, saving it to feed next season, or at any time so it will not get into the winter stores.

SOLAR WAX-EXTRACTOR TO BE TRIED AT THE MICHIGAN AGRICULTURAL COLLEGE.

Prof. Cook ordered a solar wax-extractor of us, and we sent him the original one sent us by friend Green. In regard to it he replies as follows:

Allow me to thank you, for the college, for the solar wax-extractor. We shall test it thoroughly, and improve it if we can.

In regard to the weight of the eggs a queen may lay in a day, he writes:

I already have the matter of egg-laying in tow, and you shall hear. We have scales that will weigh a breath. A. J. COOK.

Agricultural College, Mich., July 19, 1885.

SHADE AND VENTILATION A PREVENTIVE OF ABSCONDING.

During a very pleasant and instructive visit paid to the apiary of Mr. S. T. Pettit, of Belmont, my attention was practically drawn to the advantages arising from shade and ventilation for hives. Mr. Pettit stated that he never had any trouble arising from his bees vacating the hive after swarming. In the past, such had been the case; but now he was pleased to say no difficulty arose from that cause, and the trouble had been a want of comfortable quarters for the bees. The hives, combs, etc., are kept in a cool place until required for use, when the swarm entering them finds a cool, shady retreat which is made additionally comfortable by, if possible, being protected from the strongest rays of the sun, plenty of room, and free access of air. Mr. Pettit stated that he was perfectly satisfied that bee-keepers would find no difficulty from swarms absconding if this method were pursued. Of course, the very best of bee-keepers can learn something of value when visiting an apiary in the height of the season, and I learned a great deal. I always do on these visits to our leading bee-keepers; and for my part, I never desire to give such information as originating with me. R. F. HOLTERMANN.

Brantford, Ont., Canada.

REPORTS ENCOURAGING.

A COLONY THAT PRODUCED 462 POUNDS OF HONEY.

WE have had a good honey harvest this time. I took 462 lbs. of extracted honey from one colony, besides the winter supply. Several other colonies were not far behind in the amount taken. A few others gathered only enough for winter. My average is probably nearly 100 pounds per colony. C. W. DAYTON.

Nashua, Iowa.

Friend D., I wish you would tell us more about that colony that gave you that yield. Was it a hybrid or Italian? and if the latter, where did you get the queen? We should also like to know the kind of honey these bees obtained, and the style of hive or the surplus-arrangement you used. We like little snatches of news from our bee-friends, but we want to know more about it.

Bees here are doing well. I have averaged 130 lbs. per colony, and am still extracting.
 Verdugo, Cal., June 27, 1886. G. B. WOODBURY.

My bees are doing finely; have taken 90 lbs. of comb honey from one swarm.
 A. A. IRISH.
 Big Spring, Mich., June 23, 1886.

Bees are doing finely on alsike. I never had them do better on clover.
 F. D. WOOLVER.
 Munnsville, N. Y., July 3, 1886.

A TON OF WHITE HONEY IN SECTIONS.

Bees have done finely. I have a ton of white honey in sections. The bees are doing but little just now—too dry.
 W. E. KIMSEY.

Salem Center, Ind., July 7, 1886.

600 LBS. OF HONEY PER WEEK.

We started June 1st with 24 colonies of bees. We have at this date 55 colonies and 2000 lbs. of honey, and are extracting from 600 to 800 lbs. per week.

Creighton, O., June 22, 1886. A. H. DUFF.

EXTRACTING.

I am extracting the finest crop of white-clover honey I ever produced. Every cell is sealed, and so thick I can hardly throw it out with your extractor.

E. J. SCOFIELD.

Hanover, Wis., July 9, 1886.

"BEES DOING VERY FINE."

We are very busy at wheat harvest. Bees have been doing very fine. Some stands made from 60 to 80 pounds of clover and fruit-bloom honey in sections.

JOHN H. BULLERMAN.

Switz. City, Ind., June 21, 1886.

NEVER HAD BEES DO SO WELL.

I am working 200 colonies without any help, and it keeps me very busy. I never had bees do so well as they have been for two weeks. I have taken off some honey of the best quality. White clover is in bloom, and linden is full of buds, and the prospect is good for a large crop.

CHARLIE W. BRADISH.

Glendale, N. Y., June 22, 1886.

4 LBS. OF HONEY PER DAY.

I think I have had good results with the hive you sent, in a short time. I put a swarm in May 20th, and June 27th I took out 46 1-lb. boxes full. The rest were under way—white-clover honey; brood-combs were full. I calculate they made 4 lbs. per day from the start. I like the hive very much.

Bristol, Pa., June 33, 1886. W. P. PRAY.

HAVE TAKEN 18 TONS.

The season opened finely. We had a big flow of honey in some localities in May, but it has shut down. I do not think there will be any late honey. What we have extracted is very clear and of fine flavor. Last year was one of our off years. I did not get to extracting. I have taken out this season, up to date, 18 tons. There will be about half a crop in this county.

G. W. LECHLER.

Newhall, Cal., June 20, 1886.

BEES NEVER SO FORWARD IN THEIR WORK FOR 28 YEARS AS NOW.

I have never had my bees so forward with their work for 28 years as they have been this year. I wintered 18 swarms without loss. They commenced swarming May 20th, and two-thirds of them swarmed in May, and a swarm in May is a rarity here. In five consecutive days eight swarms came out. The others swarmed early in June. They

have been doing pretty well on clover, and the present prospect seems good.
 J. L. HUBBARD.
 Walpole, N. H., June 25, 1886.

FLOW OF HONEY WONDERFUL, AND FROM TEXAS TOO.

We are now having a wonderful flow of honey from the mesquite, and every thing is lovely again; and if it will only hold out long enough, your humble friend will yet come out with waving banners. I had 39 colonies after swarming time, but have doubled back to 24; but they are now 24 full colonies, not 39 nuclei, as the most of them were after the dearth.

M. BROERS.

Gonzales, Texas, June 14, 1886.

THE SUPERIORITY OF ITALIANS OVER BLACKS.

Bees are doing well. I have new swarms lived on empty comb that have made 50 lbs. of surplus honey, and east a swarm. I had 2 swarms of black bees come and enter hives that were full of comb; one of them was mostly killed. I had put a swarm of bees in the hive the day before they arrived. The other one stood beside a swarm of Italians, and had the same chance. The Italian swarm made 50 lbs. of surplus, and east two swarms, while the black one has made very little surplus and no swarms.

L. W. VANKIRK.

Washington, Pa., July 10, 1886.

A GOOD REPORT FROM ALABAMA.

My bees are doing well now. My best hive has made me 172 lbs. of comb honey. I put a section partly filled with honey to start them, in the sections. This is the best yield of honey I have ever known in this section. Forty or fifty pounds is a good yield ordinarily. My bees are pure Italian; black bees have given no surplus so far as I have heard this season. In regard to early queens, I think we can beat you a little usually; but this season was very unfavorable for early work. The bees gathered just honey enough to live on until about the middle of May, when white clover came in and they have just boomed since, although we have had a great deal of rain.

S. G. WOOD.

Birmingham, Ala., July 8, 1886.

REPORTS DISCOURAGING.

HOW THE DRY WEATHER HAS AFFECTED THE CLOVER-YIELD.

THE season here for the production of honey has not been at all favorable, as the dry weather cut short the white clover, nor is basswood yielding honey to any extent, as the blossoms wither almost as soon as opened. Our bees will work for a short time early in the morning and evening, but they do little more than keep the supply good in the brood-chamber. Our crops are all short, and quite a large per cent of the wheat will not be harvested, as it will not produce the seed sown. One thing, however, can be said in favor of these clear scorching days: they make our solar wax-extractors work to a charm.

We have not been troubled with any swarming yet this season, as the bees have plenty of room yet in the brood-chamber.

DRONELESS COLONIES, AGAIN.

On page 546, N. C. Arnold speaks of having a colony droneless. We can say that we have three good strong colonies in our yard that have not raised a

drone this season. We have kept a drone-trap on the hives nearly a month, and I failed to trap a single drone, and we have very carefully looked the colonies through, and failed to find any drones. Another point we wish to notice is, that drones were raised in the least numbers this season we ever saw; but whether it is on account of the scarcity of honey or not we can not say; but the fact *has* been, and is *now*, that there are very few drones in our apiary. After carefully looking down one side and up the other of bee-keeping, we must say the outlook is decidedly dull; but we are not ready to give up by any means. Possibly we may have rains yet that may bring out fall bloom that may help us out; but we have thus far never received any benefit from the fall bloom, as it consists principally of goldenrod, which never has produced any noticeable amount of honey for us yet.

Rochester, O., July 5, 1886. M. W. SHEPHERD.

My bees have not paid expenses yet.

BENJAMIN SHERK.

Nevada, Story Co., Ia., June 15, 1886.

NO HONEY.

My bees are lying out, and have been all summer. I have smoked them in numbers of times, but it does no good. They have not made any honey. I have read your book, but failed to find what to do. I am in trouble about them. E. J. MCCREVEY.
Tyro, Miss., June 16, 1886.

ONLY 9 LBS. FROM 15 HIVES.

Do you find that your bees are doing well this year? The bees in my neighborhood are doing very little. One man has 15 hives, and has taken off only 9 lbs. of honey. My bees have not commenced yet to build comb. I can not understand it.

WIN. H. HENICK.

Boston, Mass., June 29, 1886.

See Our Own Apiary, this issue.

THE SEASON VERY DRY; BASSWOOD A FAILURE.

I have not had a natural swarm this year. However, we had a very good flow from clover—rather heavier than usual. I have taken only 100 lbs. of box, and I have not obtained a pound of extracted honey. About one-fourth of the basswood-trees bloomed, and very sparingly. Basswood is in bloom now, and it is impossible to work in the yard on account of robbers. Our only hope now is buckwheat. We are having a very dry season.

W. S. COGGSHALL, 230.

West Croton, N. Y., July 12, 1886.

DR. BLANTON'S YIELD BELOW THAT OF LAST YEAR.

Bees are not doing very well here this year. Dr. O. M. Blanton tells that he will not get nearly as much honey this year as last. Bees have swarmed very little here this year. What makes bees swarm without building queen-cells? In all other respects they are in good condition as to being full of honey and brood.

F. S. ELDER & BRO.

Lake Village, Ark., June 30, 1886.

The Italian bees swarm quite frequently, without any preparation being made for swarming in the way of starting queen-cells.

HONEY-YIELD NOT LARGE; TODD'S CANDY.

The honey-yield will not be large here. Basswood is nearly a failure—but few blossoms. I had a fine yield of clover honey, and am hoping for a fall yield. I have just received a sample package of

Todd's candies. They are very nice, with the unmistakable honey taste. Have you ever received samples? I think it is a splendid way to work up honey. I think friend Todd is reliable in his statements. We ought to boom his candy.

Hartford, N. Y., July 17, 1886.

J. H. MARTIN.

See Editorial Department.

A POOR HONEY SEASON.

The season of 1886 has been the poorest for bees in this locality ever known. Last fall we had a fine honey-flow in September, and bees went into winter with plenty of stores. They came out in the spring, strong and in fine condition, and the season promised well up to April 20. At that time a severe drought set in, and from then to June 2 the bees did not gather enough honey to rear brood with; in fact, I do not think they got any at all. They consumed all the stores on hand; and where they were not fed, the queens quit laying. I have heard of a good many bees dying from starvation during the month of May—a thing heretofore unheard of here. The strongest colonies killed off their drones during the drought, except where they were deprived of their queens; and even where the queens were removed they would kill most of the drones. I kept my 80 colonies alive by feeding the weaker ones at dusk, and by feeding all outdoors about 4 P. M. each evening. June 2 we had a very fine rain, and for two weeks the bees stored in some honey, and some of the strongest colonies started to building comb, and would draw out foundation readily. For the past eight days they have not added any thing to their stores, though we have had fine rains lately. This is the first season in my experience where there was a failure in the honey-crop, when the field-crops were good. From all I can learn, the honey-crop is a failure all over Central and Northern Texas.

J. P. CONNELL, 68—80.

Hillsboro, Texas, June 24, 1886.

ANOTHER ADVERSE REPORT FROM TEXAS; THE LIVE OAK.

Crops of all kinds have failed in this and adjoining counties. Our bees have also done poorly. There have been a great many bees starved to death. I have had but one natural swarm this year. It has been so dry there have been no blossoms for bees to work on. I have lost only one swarm this summer. I have been in this county eight years, and bees have done well every year till now. As I told you before, I had 28 stands, and I have not taken a pound of honey as yet, and I am not likely to unless I get it from the honey-dew or live-oak balls. We have an abundance of sumac in this country and they will bloom the latter part of this month and August. Bees do well on them while they last. They gather both honey and pollen from them.

THE LIVE-OAK BALL.

We have an abundance of live-oak timber all over this country. They bear a little ball, in size from $\frac{1}{4}$ to one inch in diameter, resembling what is called the ink-ball of the black-jack tree. They seem to grow out from the small limbs of the trees, without any bloom to make them. The greatest yield from them has been in the dry years, since I have been here, so we look for a heavy crop this fall. In August they will make their appearance. They are of a whitish color; and in September and October, when the sap or water dries out of them you can see the pure honey exuding from them. Some

times you can find a drop as large as a drop of turpentine hanging at the bottom of the ball. Some times you will see it in fine particles, where it exudes from the sides. You never see honey on them at all until they commence to dry up. It is a fine article of honey, and sells well. I often sell it at 25 cents per lb.

J. A. ISAACKS.

Broomwood, Texas, July 13, 1886.

OUR OWN APIARY.

SOME OF THE SYMPTOMS OF DEAD BROOD AS FOUND AT THE HOME OF THE HONEY-BEES.

IT has been somewhat of a question with us whether the foul brood, mentioned on p. 610, is the real virulent form, or a milder type of it. At any rate, the symptoms as we find it are about as follows: The affected brood in some cases is shriveled up, and of a brown color; in others, a matured, thickened, milky mass in the cells, and in color a grayish black. In some combs the brood is all affected, and in others only an occasional cell appears. It has been said of foul brood, that the cells are sunken; but we do not find this to be the case with our diseased brood-combs; but we do find that theappings are punctured.

THE ODOR OF THE BROOD.

Well, as nearly as I can describe it, it is not unlike the smell from an old glue-pot—a gummy, rank odor. To me it is not “foul” or sickening, strictly speaking; but it certainly has an unmistakable flavor of blasted hopes.

After reading the foregoing description, perhaps some one who has had some experience with foul brood can inform us whether we have the real virulent form of the disease.

Up to the present time we have burned *eighty-three* combs. To treat them thus, and replace with new frames of foundation, we consider much cheaper than to try out the combs and boil the old frames in water. The old frames, and the paltry amount of wax so saved, would be almost insignificant, and the process of trying out the wax, it seems to me, would be attended with more or less risk. If a few robbers should get into the room where the combs were, and gain access to some of the diseased cells, and make their escape, well, I should not be surprised if you had “to fight it out on that line” all summer. No, sir! where 400 colonies and over are at stake, it doesn't pay to have diseased combs about, even for a minute. If you want to know our advice we would say, If you have reason to suspect that a colony is affected with foul brood, don't examine it when the bees are flying—at any rate, when there is any possible chance for a robber to get at the combs.

Now, I suppose when this issue is out a few will begin to declare that *they* have foul brood. Let me tell you beforehand, that the probabilities are—well, I might say a thousand to one that you do not have it. Do not be in haste to declare that your bees have the disease, until you have visible signs of its spreading to other colonies. If the disease, as we have it, were not seen to be contagious, we might question whether we had it.

THE 50 CHAPMAN HONEY-PLANTS AS SEEN ON OUR HONEY-FARM.

These plants have been in bloom for a week back, and from present indications they promise much.

They are thistle-like, about two feet in height. Each plant is surmounted upon one or more of its stalks by balls, or what botanists term heads. These are from 1½ in. to 2½ in. in diameter, and vary in number on each plant from 6 to 10 heads. The heads, when in bloom, are covered with small star-like white flowers, in the center of which the anthers, blue in color, surround the pistil. The plants with their white balls present a very pretty appearance. We were surprised to see how the bees took to these balls. Sometimes as many as eight or ten bees can be found upon each head, sipping at the nectar in a very leisurely manner. After the bees have been upon the blossoms for a little while they will tuck their tongues under their chins and remain quiet without any visible motion. If we brush them off they will in some cases drop to the ground, as if so gorged as to be unable to fly. On remaining upon the ground a moment or so they will take wing as if nothing had happened. I then concluded that they were not actually gorged, but apparently stupefied; that is, the plant seemed to have something of a narcotic effect upon the bees. I have sometimes noticed a similar effect when bees were working on sweet clover, and I believe others have reported something of the kind.

To-day, July 27th, on going over to our patch where the Chapman honey-plants are, I found that the bees visited the heads, and returned without showing any signs of the narcotic effect mentioned above. In fact, their actions were lively, and I could not find that any of the bees would drop to the ground when I brushed them off. Perhaps the day has something to do with it.

The boss printer says, “No more room,” so I'll have to stop right here.

E. R. ROOT.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,

EDITOR AND PUBLISHER,
MEDINA, O.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, AUG. 1, 1886.

We have treasures in the field, of wheat, and of barley, and of oil, and of honey.—JER. 41:8.

Our subscribers now number 5814, a gain of 191.

THE EDITOR OF GLEANINGS OFF ON A WEEK'S VACATION AMONG BEE-MEN AND OTHERS.

ABOUT the time this issue is out I shall probably be at the honey-farm of H. Chapman, Versailles, N. Y. Here I expect to meet other bee-men, and in committee examine into the merits of the Chapman honey-plant, which will then be in full bloom. Leaving there, I hope to visit friend Cole, distinguished as the originator of the so called “New Agriculture,” and time permitting, take in one or two other points.

FILLING ORDERS FROM NEIGHBOR H.'S APIARY.

AS stated in another column, on account of foul brood being found in our apiary we shall fill all

orders for bees and queens from neighbor H.'s two apiaries. They are situated $3\frac{1}{2}$ and 2 miles respectively, from the Home of the Honey-Bees, and it is altogether improbable that the disease from our hives should be transmitted to his bees. Neighbor H. has examined several of our affected colonies, and, after carefully inspecting all his colonies, assures us that he has nothing of the kind among his bees. We think our friends may feel safe in still ordering bees of us as heretofore.

TODD'S HONEY CANDY.

We have received samples of this, and it is a very nice confectionery, with an unmistakable flavor of honey. There is some tendency to stickiness, but not very much. The trouble is entirely obviated with the caramels, which are wrapped in prepared paper, as usual, to prevent sticking or daubing. One difficulty in the way of getting it to take the place of common confectionery is, that the raw material is yet rather higher than sugar. If people will pay a little more for this kind of candy, it might come into general use. I don't think that a recipe could be given for making it at home. It could be done, probably, by a regular confectioner.

THE HONEY-CROP A FAILURE IN ENGLAND.

We are sorry to learn that our brother bee-keepers across the water have had an exceptionally poor honey season this year. In the *British Bee Journal* of July 8, page 302, we find the following:

During an experience of over forty years we do not recollect a season more unfavorable to the bee-keeper than the present. Summers, in which rain fell on almost every day, interspersed with fitful gleams of sunshine, indeed almost honeyless seasons, wherein it was impossible for the bees to store a surplus, and scarcely to live from hand to mouth, we do remember; but a season so sunless, with prevailing cold north and east winds, blowing almost continuously from November up to the 21st of June, we can not call to mind.

The results to many apiarists, especially to the uninitiated, have been most disastrous.

Perhaps this state of affairs in England will have a very beneficial effect upon our honey-trade.

"THE PROOF OF THE PUDDING IS IN THE EATING."

DOOLITTLE, in the *A. B. J.* of July 21, says:

My plans are often called expensive, and my hive and fixtures complicated; but I believe there is as little labor and cash outlay by my plan of producing \$1000 worth of comb honey as by any other plan in existence. As proof, I will say that from less than 50 colonies of bees (spring count) I have cleared over \$1000 each year for the past 13 years, taken as an average. I have not hired 13 days' labor in that time in the apiary, nor had any apprentices or students to do the work for me, although I have had many applications from those who wished to spend a season with me. Besides my labor with the bees, I take care of my garden and a small farm (20 acres); have charge of my father's estate; run my own shop and steam-engine, sawing sections, hives, honey-crates, etc., for myself and neighbors; write for seven different papers, and answer a host of correspondence.

The old saying is, "The proof of the pudding is in the eating," and so I now say, as I have said before in these columns, that all I have to recommend the plans I use is the success attained by them.

Does this not in part answer the wail of a few, "Bees don't pay"? The old saying, "What man has done man can do," applies right here. It may be there is something in the locality; but certainly a great deal rests with the man.

BEEES AND BEE-KEEPING, BY FRANK CHESHIRE.

We are in receipt of Volume I. of this work, recently noticed by Prof. Cook. So far as the natural history of the honey-bee is concerned, this book in many respects is far in advance of any thing that has ever before appeared in print; in fact, I am astonished and pleased to find that we have, in any quarter of the globe, a microscopist who has gone into this subject so thoroughly as Frank Cheshire. The typographical appearance of the work is also simply a wonder; and the engravings, in beauty and excellence, are superior to any thing it has ever before been my fortune to meet anywhere in

the whole realm of scientific knowledge. At the present writing I have not been able to read the book so thoroughly as I mean to do. It is, without doubt, a wonderful addition to our fund of knowledge in regard to the structure of the bee. Very likely the book contains errors, for to err is but human. The life-sized pictures of a full-grown bee are far in advance of any thing that has ever been accomplished heretofore, and we can only congratulate friend Cheshire on having been able to procure the assistance of such skillful artisans to bring his work before the world. The price of the book is \$2.50—perhaps twice as much as books of a similar size cost in our country; but the beautiful engravings alone ought to be sufficient to induce any one to pronounce the book cheap at \$2.50. We can mail it at that price.

MR. THOMAS HORN.

JUST after our last issue went to press, the following note to Mr. Horn's customers came to hand:

TO MY CUSTOMERS WHO ARE READERS OF GLEANINGS.

On the 26th of July I will have filled all orders now on my books for bees and nuclei; and by the 26th, for queens, so if you have ordered any goods that you have not received, please let me hear from you at once, and oblige yours truly,
Sherburne, N. Y., July 12, 1886. THOMAS HORN.

Very good, friend Horn; and we sincerely trust that by the time this reaches our readers there will not be one who can say his bees, queens, or money has not been received. If there are any such, however, they will please write directly to Mr. Horn. And I would suggest that they also state what will make every thing satisfactory, if it is not already so. If Mr. Horn does not respond promptly, then (but not before) please write us. Mr. Horn has sent us a very pretty photograph of his apiary, showing that he has a large number of hives employed in his business. He also states that he has filled over 500 orders this season, and that less than two per cent have made any complaint of dissatisfaction.

GOODS AT A REDUCTION OF 25% FOR FAIRS.

To those of our friends who desire to exhibit our goods at their county or State fairs this season, and distribute our price lists to those interested in bee-keeping, we will offer the following inducement: You may deduct 25% from the retail price of any or all of the following-named articles in our price list, providing you state in your order, in good faith, that the goods are to be on exhibit at your fair:

- One saw-table for hive-making;
- One dovetailing table;
- One cutter-head and table;
- One V-groove section machine (only 20 per cent off this);
- One comb-fdn. machine, 10, 12, or 14 inch;
- Clark's, Parker's, and Gray's fdn. fasteners, in any quantity;
- One honey-extractor, any size;
- One uncapping-can;
- Metal corners, in any quantity;
- 50 brood-frames, either all-wood or metal-cornered, in flat, wired, or unwired;
- Smith fountain pump or sprinkler;
- One of each or any style of hives given in our catalogue, put up or in the flat;
- One of each or any style of retailing cases;
- One pair of square honey-cans in a box;
- One honey-knife, each or any style;
- One lamp nursery;
- One sheet perforated zinc, or sample honey-board;
- One box of 500 sections, 1-piece V-groove, $4\frac{1}{4} \times 4\frac{1}{4}$;
- Smokers in any quantity;
- Bee-veils, one of each kind;
- Wax-extractors, one of each or any one.

We will also let you have all the A B C's you want to sell, @ 40% discount; the more you sell, the better; but you must not sell them below our retail price unless you sell more than one at one sale,

\$2.50 CHEAP \$2.50

I will sell three-frame (Simp. size) nucleus colonies, all straight worker-comb, well-filled with brood and honey, 1 pound of Italian bees, and nice tested Italian queen, for only \$2.50. Now, friends, I guarantee these colonies to be first-class in every respect. Fifty colonies ready now. A fine lot of untested queens at 75 cts.; \$4.00 per ½ doz., and tested at \$1.00; \$5.50 per ½ doz. Safe arrival and satisfaction guaranteed.

F. W. MOATS,
14d The Bend, Defiance Co., Ohio.

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ITALIAN QUEENS, by Return Mail, Test-
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KENTUCKY QUEENS. Italians, Holy-Land,
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60c to 85c per lb. Queens, 30c to \$1.75, according
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from free circular. "**How to Raise Comb
Honey,**" an illustrated pamphlet, just out, price
5 cents. Address **OLIVER FOSTER,**
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WE WILL SELL

Chaff hives complete, with lower frames, for \$2.50;
in flat, \$1.50. A liberal discount by the quantity.
Simplicity hives, Section Boxes, Comb Fdn., and
other Supplies, at a great reduction. We have new
machinery, and an enlarged shop. **Italian Bees
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From select imported mother: After May 15, \$1.00.
Wax worked into fdn. for a share, or by the pound.
Satisfaction guaranteed. **THOS. & BENJ. YOUNG,**
10-15db **LA SALLE, LA SALLE CO., ILL.**

ITALIAN QUEENS. Untested, 75c.; six, \$4.00. Tested,
\$1.50. Write for price list of bees, fdn., etc.
13-15db **JNO. NEBEL & SON, High Hill, Mo.**

FIRST IN THE FIELD!!**The Invertible Bee-Hive**

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A. J. COOK, Author and Publisher.
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is rearing Italian queens for sale again this season, and can furnish them by mail, safe arrival guaranteed, as follows: Single queen, \$1.00; six queens for \$5.00; twelve or more, 75 cts. each. Tested queens, \$2.00 each. Make money orders payable at Flint, Mich. Send for price list of bees (full colonies, or by the pound). Given foundation, white-polar sections, hives, cases, feeders, empty combs, etc. 13tfdb

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ITALIAN QUEENS,

Untested, in April, \$1.25 each; \$13.00 per doz. From May 5 to June 1, \$1.10 each, \$12.00 per doz. After June 1, \$1.00 each, \$10.00 per doz. Tested, \$2.50 each; select tested, \$3.00 each to first of June. Contracts taken with dealers for the delivery of a certain number of queens per week, at special figures.

FOUR-FRAME NUCLEUS,

With pure Italian queen, containing 3 pounds of bees when received; in April, \$4.00; after May 25, 25 cts. less. Safe arrival and satisfaction guaranteed. For more particulars, send for catalogue for 1886.

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DADANT'S FOUNDATION

is asserted by hundreds of practical and disinterested bee-keepers to be the cleanest, brightest, quickest accepted by bees, least apt to sag, most regular in color, evenest, and neatest, of any that is made.

It is kept for sale by Messrs. A. H. Newman, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; F. L. Dougherty, Indianapolis, Ind.; Chas. H. Green, Berlin, Wis.; Chas. Hertel, Jr., Freeburg, Ill.; Ezra Baer, Dixon, Lee Co., Ill.; E. S. Armstrong, Jerseyville, Illinois; Arthur Todd, 1910 Germantown Ave., Phila., Pa.; E. Kretschmer, Coburg, Iowa; Elbert F. Smith, Smyrna, N. Y.; D. A. Fuller, Cherry Valley, Ill.; Clark Johnson & Son, Covington, Kentucky; J. B. Mason & Sons, Mechanic Falls, Maine; C. A. Graves, Birmingham, O.; M. J. Dickason, Itawatha, Kan.; J. W. Porter, Charlottesville, Albemarle Co., Va.; E. R. Newcomb, Pleasant Valley, Dutchess Co., N. Y.; J. A. Humason, Vienna, O.; G. L. Tinker, New Philadelphia, O.; J. M. Shuck, Des Moines, Ia.; Aspinwall & Treadwell, Barrytown, N. Y.; Barton, Forsgard & Barnes, Waco, McLennan Co., Texas; W. E. Clark, Oriskany, N. Y., and numerous other dealers.

Write for *samples free*, and price list of supplies, accompanied with **150 Complimentary and unsolicited testimonials**, from as many bee-keepers, in 1883. We guarantee every inch of our foundation equal to sample in every respect.

CHAS. DADANT & SON,
3btfd **Hamilton, Hancock Co., Illinois.**

Batchelder's Drone and Queen Trap

Is the only one made that does not hinder the bees in their work. Send 85 cents for sample. Send for circular, and see what A. I. Root says about it.
10tfdb **J. A. BATCHELDER, Keene, N. H.**

THE CANADIAN BEE JOURNAL.

WEEKLY, \$1.00 PER YEAR.

JONES, McPHERSON & CO., Publishers, Beeton, Ontario, Canada.

The only bee journal printed in Canada, and containing much valuable and interesting matter each week from the pens of leading Canadian and United States bee-keepers. Sample copy sent free on receipt of address. Printed on nice toned paper, and in a nice shape for binding, making in one year a volume of 832 pages.
9tfb

REDUCTION IN PRICES.

We hereby notify our customers that there is a reduction in foundation from the prices quoted in our *March* retail price list. All parties interested will please mail us a card for new prices.

CHAS. DADANT & SON,
11tfdb **Hamilton, Hancock Co., Ill.**

HYBRIDS AT \$3.00 PER COLONY.

Must be sold prior to Aug. 25th, 25 colonies of bees, in frame hives; plenty of honey to winter, only \$3.00 each. I am going to Pacific Coast.
14-15d
Address **H. M. WINSLOW, Liberty, Clay Co., Mo.**

SECTIONS.

Western headquarters for bee-men's supplies. Four-piece sections, and hives of every kind, a specialty. Flory's corner-clamps, etc. Orders for sections and clamps filled in a few hours' notice. Send for sample and prices.

M. R. MADARY,
22 21db **Box 172, Fresno City, Cal.**

Foundation-Mill For Sale.

One ten-inch Root comb-mill, second hand. The mill has, however, been completely fitted up, painted, and varnished, and is, to all appearances, both in looks and quality of work, equal to a new one. Price \$15.00. The list price of a new mill of this kind is \$20.00.
A. I. ROOT, Medina, O.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per annum, when given once a month, or \$4.00 per year if given in every issue.

\$1.00 Queens.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.

*H. H. Brown, Light Street, Columbia Co., Pa. 1tf

*Paul L. Viallon, Bayou Goula, La. 13tf

*S. F. Newman, Norwalk, Huron Co., O. 13tf

*D. G. Edmiston, Adrian, Len. Co., Mich. 11tf

*S. G. Wood, Birmingham, Jeff. Co., Ala. 13tf

*E. Kretschmer, Coburg, Mont. Co., Iowa. 11tf

D. McKenzie, Camp Parapet, Jeff. Parish, La. 13tf

Ira D. Alderman, Taylor's Bridge, Samp. Co., N.C. 13tf

*Jos. Byrne, Ward's Creek, East Baton Rouge

11tf Par., La.

J. W. Winder, Carrollton, Jeff. Par.,

New Orleans, La. 3tf

*E. Burke, Vincennes, Knox Co., Ind. 3-1

Richard H. Bailey, Ausable Forks, Essex Co., N. Y. 5-15

S. M. Darrah, Chenoa, McLean Co., Ill. 7-17d

S. H. Hutchinson & Son, Claremont, Surry Co.,

7-17d Va.

*N. E. Cottrell, Burdick, Porter Co., Ind. 7-17d

Peter Brickey, Lawrenceburg, And. Co., Ky. 9tf

C. C. Vaughn, Columbia, Tenn. 9tf

*J. W. Keeran, S. E. cor. Mason and Moulton St.,

Bloomington, Ill. 9tf

D. A. McCord, Oxford, Butler Co., O. 9-19d

W. S. Ward, Fuller's Station, Albany Co., N. Y. 1315d

J. B. Hains, Bedford, Cuyahoga Co., O. 15tf

C. P. Bish, Petrolia, Pa. 15-19

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.

P. L. Viallon, Bayou Goula, Iberville Par., La. 1tf

C. W. Costellow, Waterboro, York Co., Me. 1-23

Kennedy & Leahy, Higginsville, Laf. Co., Mo. 23tf

E. Kretschmer, Coburg, Montgomery Co., Ia. 23tf

DR. J. W. CRENSHAW, Versailles, Woodford Co., Ky., has untested Italian queens for sale at 75 cents each. 14-15d

COLONY in 10-frame hive, \$5.00; tested queens, \$1.50; untested queens, 75 cts.; 2-frame nucleus, \$1.50; 3-frame nucleus, \$2.00 (no queen). 1 have Italian bees; size of above frame, 9 1/2 x 17 1/2.
OTTO ELEANOW, Detroit, Mich., (Opp. Fort Wayne Gate).



SURE TO SEND

FOR MY NEW

PRICE LIST FOR 1886,

Before purchasing your **Bee-Supplies**. Cash paid for Beeswax. 7tfdb

A. B. HOWE, Council Bluffs, Ia.

HONEY COLUMN.

CITY MARKETS.

NEW YORK.—*Honey.*—The honey market is almost devoid of interest, more particularly in comb honey. We find quite a large stock being carried over in dealers' hands; although our stock is light, what we have is dark and off grades, and will be in good position for the coming crop. It is difficult to tell what prices will be on the new crop; but from reports received from nearly all sections of the country, we think prices will be low. Present quotations as follows:

Fancy white comb, 1-lb. sections	10@12
" " " 2-lb. sections	8@10
" buckwheat 1 and 2-lb. sections	5@8
Extracted, white clover	5c
" California	4½@5
" Southern	45@55
per gallon	
Beeswar, 22@25.	MCCAUL & HILDRETH BROS.,
July 10, 1886.	34 Hudson Street, Cor. Duane St.
	New York City.

KANSAS CITY.—*Honey.*—The receipts of new honey are good, and very fine. The demand is good, and stock in store is light of one-pound frames. One-pound frame, white clover, 13@14
One " " dark 11@12
Two " " white clover 11@15
" " dark 8@10
" " California white 10@11
" " dark 8@9

Extracted white clover, 5@6; dark, 3@4. California white, 4½@5. Dark, 3½@4. Beeswar, 20@22.
July 22, 1886. CLEMONS, CLOON & CO.,
Cor. 4th and Walnut St's, Kansas City, Mo.

MILWAUKEE.—*Honey.*—The market is fairly supplied with honey, and trade is dull, and prices depressed; outlook for a large production, and already some is being peddled about the city by the raisers themselves, demoralizing the prices, which should not be done. We will quote choice white, in 1-lb. sections, 14@15; the same in 2-lb. sections, 13@15; extracted, in bbls. and kegs, white, 5@7; in tin cans, white, 6@8; extracted, dark, in bbls. and kegs, 4@6.
Beeswar, 25. A. V. BISHOP,
July 23, 1886. 142 W. Water St., Milwaukee, Wis.

CINCINNATI.—*Honey.*—There is no new feature in the market. Demand from manufacturers is still dull, but somewhat improved. The honey harvest is below a medium crop in Ohio, Indiana, and Kentucky; but no improvement in prices need be expected, judging by present indications.—Prices for extracted honey range from 3½@8c on arrival. No arrivals yet of new comb honey, and prices nominal.
Beeswar.—This is in fair jobbing demand, and arrivals are good. It brings 18@22 cts. for good to choice yellow on arrival. CHAS. F. MUTH & SON,
S. E. Cor. Freeman and Central Avenues,
July 19, 1886. Cincinnati, Ohio.

CHICAGO.—*Honey.*—Honey is coming on the market very freely, and is of good quality. At present there is not any demand, so that prices are nominal. Any offer at 12@13c would be accepted, yet 14c is being asked. Extracted, without change.
Beeswar, 25. R. A. BURNETT,
July 21, 1886. 161 So. Water St., Chicago Ill.

DETROIT.—*Honey.*—Comb honey in 1-lb. sections is bringing 11@13c per lb., and the market is well supplied. Extracted is dull, and very few sales, bringing 8@9 cts. Beeswar is in good demand, but a little lower for average wax. We are paying 23c.
M. H. HUNT,
July 21, 1886. Bell Branch, Mich.

CLEVELAND.—*Honey.*—The market at present is rather dull; prices, however, are well maintained. Choice new 1-lb. sections of white are selling at 14c.; second quality, 12@13. Extracted not salable.
Beeswar, 22@25. A. C. KENDEL,
July 26, 1886. 115 Ontario St., Cleveland, Ohio.

NEW YORK.—*Honey.*—There is no change in the market of honey since our last report, about two weeks ago.
THURBER, WHYLAND & CO.,
July 12, 1886. Reade and Hudson Sts.,
New York, N. Y.

BOSTON.—*Honey.*—There is no change in prices of honey. Sales are very light. BLAKE & RIPLEY,
July 12, 1886. 57 Chatham St., Boston, Mass.

FOR SALE.—3000 lbs. of perfectly ripened white-clover extracted honey, in 55-lb. iron-jacket tin cans at 7c per lb., and Mr. A. I. Root's price of can.

MRS. NELLIE M. OLSEN,
Nashotah, Waukesha Co., Wis.

FOR SALE.—1000 lbs. white comb honey in sections, put on board cars here for 14c per lb.
WM. WITHROW, Paint Valley, Holmes Co., Ohio.

FOR SALE.—2000 lbs. of white-clover and basswood honey in 1-lb. sections; and 3500 lbs. of extracted, put up in 25-gal. barrels. What can you pay for it, delivered here on board of cars? If you would like a sample, I can send you one.

H. B. MORRISSON, Fayette, Fayette Co., Iowa.

FOR SALE.—A No. 1 extracted honey, from clover and basswood, in the following packages—package free, delivered on board cars in Newton: 3 one-half bbls. @ 6½c per lb.; 2 10 gallon kegs @ 7c per lb. Also about 150 gallons in open bbls. Satisfaction guaranteed.
SAMUEL LISTER, Newton, Iowa.

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock; and yet it is often times quite an accommodation to those who can not afford higher-priced ones.

A few black queens, at 15 cents.

JNO. C. CAPEHART, St. Albans, W. Va.

Mismated queens, reared from select tested Italian queens. I have 20 now, which will go for 40 cts. apiece. Prompt shipment and safe arrival guaranteed. S. H. COLWICK, Norse, Bosque Co., Texas.

I shall have 8 hybrid queens in August, at 25 cts. each; 5 for \$1.00. I insure safe delivery—all young queens.

BEN. J. COLE,
Marietta, Washington Co., Ohio.

I shall have a few black and hybrid queens in August, to sell at 20 and 35 cents. Safe arrival guaranteed. LUTHER W. GRAY, Orlando, Fla.

I have 14 mismated queens which I want to sell. Price, three 30 cent ones and eleven 50-cent ones.
R. H. BAILEY, Ausable Forks, N. Y.

I have a few black and hybrid queens for sale, at 25 cts. each; also a few queens that produce mostly three-banded bees, at 50 cts. each. I warrant all to be good prolific queens. L. W. VANKIRK,
P. O. Box 178. Washington, Pa.

I have a few fine hybrid queens for sale at 40 cts. each. LEE SPAHR, Xenia, Ohio.

I have some hybrid queens in the neighborhood that I will sell at 25 cts., yellow and prolific. C. C. KIRKMAN, Coxville, Pitt Co., N. C.

I have 20 prolific hybrid queens to dispose of at 25 cts. each, rather than kill them. W. A. SANDERS, Oak Bower, Hart Co., Ga.

I have several young hybrid queens to dispose of. Will mail at 35 cts. each, or 3 for \$1.00. N. ADAMS, Sorrento, Orange Co., Fla.

I am Italianizing, and will have over 30 queens which I will sell for 10 cts., and a provisioned queen-cage each. W. J. FINCH, JR., Chesterfield, Ill.

One dozen hybrid queens for sale from Aug. 1st to 15th, for 30 cts. each, or four for \$1.00. Ready now. GEO. P. KIME, Evansburgh, Cosh. Co., O.

I have some Italian hybrid queens that I will mail at 30c each, and guarantee safe arrival. N. A. KNAPP, Rochester, Lorain Co., Ohio.

EXPLANATION. To the many who have sent to us for our catalogue, and have not received one, we would explain that the demand has been greater than we could supply, but we will send one of our next annual edition to all such as soon as issued. WATTS BROS.

Murray, Clearfield Co., Pa.

15d

Pure Italian Queens.

I have purchased the entire stock of bees of Mr. L. L. Langstroth. I will sell queens from natural swarming, at 80 cents each, or six for \$4.00. Safe arrival guaranteed.

MERICAN STIBBENS,
Oxford, Butler Co., O.

15d

Oldest Bee Paper in America—Established in 1861.

AMERICAN BEE JOURNAL,

16 page Weekly—\$1.00 a year.

Sample Free. **THOMAS G. NEWMAN & SON,**
925 West Madison Street, Chicago, Ill.

PASTEBOARD BOXES

FOR ONE-POUND SECTIONS OF

COMB HONEY.



This box has a bit of "red tape" attached to it to carry it by. It makes a safe package for a single section of honey for the consumer to carry, or it can be packed in a trunk, if he wants. It can be opened in an instant. The price of the box is 2 cts. each, set up; in the flat, 15 cts. for

10; package of 25, 30 cts.; \$1.00 per 100; or \$9.00 per 1000; 10,000, \$80. If wanted by mail, add \$1.00 per hundred for postage. Colored lithograph labels for putting on the sides, two kinds, one for each side, \$3.00 per 1000. A package of 25, labeled on both sides, as above, 50 cts. By mail, 30 cts. more. They can be sold, labeled on one side or both sides, of course. We have only one size in stock, for Simplicity sections. Sample by mail, with a label on each side, 5 cts. If you want them shipped in the flat, labels already pasted on, the price will be ten cents per hundred for putting them on.

Your name and address, and the kind of honey, may be printed on these labels, the same as other labels. The charge for so doing will be 30 cts. per per 100; 250, 50 cts.; 500, 75 cts.; 1000, \$1.00.

A. I. ROOT, Medina, O.

FOR SALE.

I will sell full swarms of Italian bees during this month for \$5.00 each; two for \$9.00, or five or more at one order at \$4.00 each. They are in new 10-frame L. Simplicity hives, and in good winter shape, ready to ship by return express; good covers and bottom-boards go with the hives. Safe arrival guaranteed. Send money by registered letter.

Address **M. R. NICHOLS,**
15tdb Weaver's Corners, Huron Co., O.

100 GOLDEN ITALIAN QUEENS.

Cells taken from colonies that have swarmed. Warranted second to none in every respect. Should any prove to have mated they will be promptly replaced with nice tested ones. I will ship next day after receiving order, if so desired. Price 75 cts. each; per doz., \$8.00.

15-16d **JAMES WOOD, North Prescott, Mass.**

JOB LOT OF WIRE CLOTH

AT GREATLY REDUCED PRICES.

SECOND QUALITY WIRE CLOTH AT 1½ CTS. PER SQUARE FT.

These prices are good only when you take a full roll. If you order less than a roll we charge 2c. per sq. ft. Sometimes the roll you order is gone before your order reaches us, in which case we send the next largest roll, unless it is a great deal larger.

SOME OF THE USES TO WHICH THIS WIRE CLOTH CAN BE APPLIED
This wire cloth is second quality. It will answer nicely for covering doors and windows, to keep out flies; for covering bee-hives and cages for shipping bees; making sieves for sifting seeds, etc.
Number of Square Feet contained in each Roll Respectively.

Inches Wide.	No. of Rolls.
36 59	21 rolls of 217, 37 of 216, 2 of 215 s. f.
28	2 rolls of 233 s. f.
38 27	23 rolls of 316, 2 of 317, 1 each of 632, and 235 s. f.

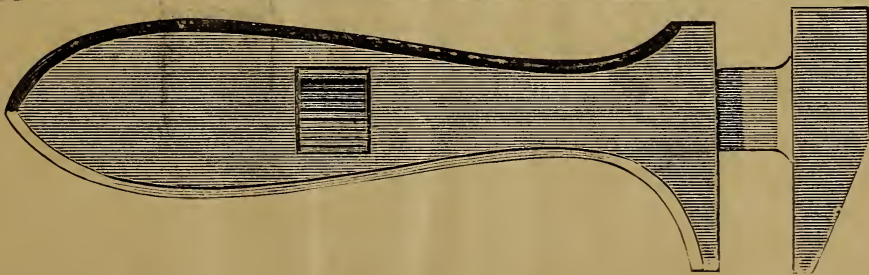
FIRST QUALITY WIRE CLOTH AT 1¼ CTS. PER SQUARE FT.

The following is first quality, and is worth 1¼ cts. per square foot. It can be used for any purpose for which wire cloth is ordinarily used; and even at 1¼ cts. per sq. ft. it is far below the prices usually charged at hardware and furnishing stores, as you will ascertain by making inquiry. We were able to secure this very low price by buying a quantity of over one thousand dollars' worth.

Inches Wide.	No. of Rolls.
21 39	rolls of 200 sq. ft. each.
26 55	rolls of 216 sq. ft. each; 1 each of 199, 195, 201, 200, 227, 204 sq. ft.
28 71	rolls of 233, 10 of 234, 6 of 222 sq. ft.; 1 each of 257 sq. ft.
30 23	rolls of 250 sq. ft.
32 13	of 266, 4 of 256, 1 of 275 sq. ft.
34 25	rolls of 283 sq. ft. each; 1 of 198 sq. ft.
36 15	rolls of 300 sq. ft. each; 1 of 288 square ft.
38 1	roll each of 300 and 316 sq. ft.
46 1	roll of 192 square feet.

A. I. ROOT, Medina, Ohio.

OUR TEN-CENT ADJUSTABLE WRENCH



The above cut gives the exact size of this very convenient tool, for the very insignificant price of only 10 cents. If wanted by mail, 6 cts. extra for postage. One of these wrenches in your pocket will oftentimes save you the cost of one in a single day. Who has not had to stop a plow, cultivator, or, possibly, some more complicated piece of machinery, while he went to the tool-house or somewhere else for an adjustable wrench? A good many times two wrenches are needed—one to hold the square head of a bolt from turning while you turn the nut. In such a case these little fellows will do just as well as a larger one. It is true, they are not strong enough for heavy work; but if you break them, why, you are only 10 cents out, after all.

A. I. ROOT, Medina, Ohio.

APIARIAN SUPPLIES

W. T. FALCONER, - JAMESTOWN, N. Y.,

—ALSO MANUFACTURER OF—

THIN FOR SECTIONS, AND HEAVY FOR BROOD.

Dealer in a Full Line of Bee-Keepers' Supplies.

Send for *Illustrated Catalogue* for 1886. Free.

17tfd

We furnish EVERY THING needed in the Apiary, of practical construction, and at the lowest price. Satisfaction guaranteed. Send your address on a postal card, and we will send you free our large Illustrated Catalogue.

E. KRETCHMER, COBURG, MONTGOMERY CO., IOWA.

**Having Just Completed our Large Factory we are Prepared to Offer all Kinds of
Bee-Keepers' Supplies at**

— WE MANUFACTURE —

2 STYLES OF SMOKERS,
2 STYLES OF WAX-EXTRACTORS,
"V" GROOVE SECTIONS, ETC.

Liberal Discounts on Large Orders. Send a Postal Card for Our ILLUSTRATED CATALOGUE.

ASPINWALL & TREADWELL, BARRYTOWN, N. Y.

Full swarm of Italian bees, from \$4.16 to \$8.00 per colony. Tested queens, \$2.01 each; \$18.00 per dozen. Untested queens, \$1.00 each, \$9.00 per dozen. Price list in full, free. I have a large lot of fine Pekin ducks for sale at \$2.50 per pair. California bronze turkeys, from my mammoth gobbler Jumbo. He weighed 30 lbs. at 8 months old, and weighs 50 lbs. when in good flesh. Young turkeys from \$5.00 to \$7.00 per pair. GEO. W. BAKER, 15-19 Milton, Wayne Co., Ind.

115 COLONIES OF BEES FOR SALE CHEAP.

Pure Italians in 10-frame Sim. hives,	-	-	\$4.00
Hybrids and blacks, " " "	-	-	3.50

Or the entire lot for \$400.00.

All are strong, as the swarms have been put back, and all have made surplus honey the present season. This is a rare chance for some one who expects a full crop of honey. I will sell from 1 to 115 to suit customers, and will put them on board cars free. My reason for selling: I have business which will take me from home, so I can not attend to the bees. Address at once.

15d G. W. STANLEY, Wyoming, N. Y.

THE AMERICAN APICULTURIST

Sent one year, and a tested Italian queen, to each subscriber; all for \$1.50. Sample copies free.
15tfdb Address HENRY ALLEY, Wenham, Mass.

BEE-MEN, TAKE NOTICE.

**New house, new goods, prompt attention
to orders, first-class materials at
bottom prices.**

EVERY THING FOR THE APIARY.

L. N. CLARK & SON,
SEND FOR CIRCULAR. 38 Dey St., New York.

Send \$1.25, and I will express 5 lbs. of Todd's Honey Candies, same as made a sensation at last Pennsylvania State Fair. Remember, every pound sold helps the honey-trade. Special rates for quantities for fairs. Dadant Foundation always in stock at market prices. Bees, Queens, Hives, Smokers. Vol. I of Frank Cheshire's new book mailed free, \$2.50.

914db ARTEUR TODD, 1910 Germantown Ave., Philadelphia, Pa.

Tested queens, \$1.50 each; untested, 70c each; 3 for \$2.00; 5 for \$3.00. All bred from a select imported mother. By return mail.

15tfdb D. G. EDMISTON, ADRIAN, LEN. CO., MICH.

**FARM OF 57 ACRES,
AND APIARY OF OVER 100 COLONIES
OF BEES FOR SALE.**

15tfdb) GEO. A. WRIGHT, GLENWOOD, SUSQ. CO., PA.